BatchSync Secure FTPS/SFTP User Manual

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BatchSync Secure FTPS/SFTP

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Part I

Introducing BatchSync Secure FTPS/SFTP

1 Introducing BatchSync Secure FTPS/SFTP

BatchSync Secure FTPS/SFTP is a fast and smart tool for synchronizing folders. Folder synchronization, or sync for short, is a method to make the source and target folders identical. BatchSync makes folders identical by transferring only files that have changed since the last sync, minimizing the time and bandwidth required for the sync. The folders being synchronized can be local folders or reside at a network share (UNC filenames and paths are supported). The other side of the sync set can reside on an FTP server running any common FTP server software. The secure edition adds support for FTPS servers and SSH2 servers running SFTP service.

Creating backups: One-way sync

One-way sync is most commonly used to create backups. In one-way sync, all of the new and changed files found on the source are transferred to the target. You can optionally enable the deletion of any extra files in the target. With this option enabled, the files that do not exist on the source are also deleted on the target. In this way, the target is an exact copy of the source.

True bi-directional synchronization: Two-way sync

Two-way sync ensures that two folders (and their subfolders) remain in sync when files are changed on both sides. BatchSync does this by scanning all of the files in the source and target folders, and locating the new and changed files on both sides. It then transfers all of the files that are newer than the corresponding files on the other side.

You can optionally enable propagated deletions for two-way syncs. With this option enabled, if you delete a file on one side, BatchSync will propagate this deletion to the other side by deleting this same file on the other side. This results in both sides containing exactly the same set of files.

Chained Synchronization

You can create a chain of sync tasks to keep computers at several locations in sync, even when they are not directly connected to each other. For example, sync computer A and B, which results in all of the changes in A propagating to B. Then, sync B and C, making these two identical. As result, A, B, and C all contain exactly the same set of files.

Sync vs. Copy vs. Move files

The default file transfer action in BatchSync is a sync. It is same as copy, but transfers only files that have changed since the last sync, minimizing the time and bandwidth required for the file transfer. But sometimes you might just want to copy or move files, not sync, and BatchSync can do that easily by changing few task options.

SyncDB™ - Advanced tracking for all file additions, changes and deletions

It's usually difficult to compare files and track changes on a remote FTP server, because the file sizes

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and dates are usually modified when the files are uploaded to the FTP server. BatchSync uses the smart SyncDB™ feature to track changes to files, allowing it to automatically know which files need to be transferred. SyncDB also allows software to properly track file deletions in two-way syncs, and propagate these deletions to the other side. Combined with multithreaded file transfers and on-the-fly compression; this results in the fastest way to keep folders in sync.

Features

- Save sync source and target folders - with options - as a sync task
- Run sync tasks with a single mouse click
- Sync Preview - Display files that will be transferred, in tree view, without actually transferring anything
- SyncDB tracks changes to files automatically
- Multithreaded transfers to speed up the sync
- On-the-fly file compression to accelerate transfers
- One-way and Two-way syncs
- Recursively sync folders and their sub-folders (optionally exclude sub-folders with filters)
- Filter files to include by file/folder name, size, date changed, and attributes
- Filter files to exclude by file/folder name, size, date changed, and attributes
- Set up rules to handle conflicts (same file changed on both source and destination)
- Automatically resume interrupted transfers
- Automatically reconnect and resume an unlimited number of times (user defined max retries, timeouts etc.)
- Optionally delete files on destination that do not exist on source
- Extensive logging options with automatic log file rotation schemes
- Sync local, network, and FTP folders
- Secure edition adds support for FTPS and SFTP over SSH2 protocols

Full list of features

Click here to see a full list of features and learn about the differences between the BatchSync and InstantSync editions.

Getting Started

Please read the overview and step-by-step tutorial to get started using BatchSync.

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Part II

BatchSync vs. InstantSync

2 BatchSync vs. InstantSync

BatchSync and InstantSync are smart and fast tools for folder synchronization. InstantSync is the perfect solution for webmasters and system administrators who need to sync folders with a few mouse clicks. BatchSync contains all the features of InstantSync and adds the possibility of running sync tasks as scheduled batch runs. Both pieces of software come in two different flavors, FTP and Secure FTPS/SFTP editions. The FTP edition supports the de-facto standard for internet file transfers - FTP. The Secure FTPS/SFTP edition adds support for secure FTP transfers using SSL encryption, known as FTPS, FTP/SSL, or FTP over SSL. It also supports folder synchronization using SFTP service over the SSH2 protocol.

Here is a table that summarizes the features of the different versions and editions:

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Feature	InstantSync FTP	InstantSync Secure FTPS/SFTP	BatchSync FTP	BatchSync Secure FTPS/SFTP
Task Editor software for creating and managing sync tasks	Yes	Yes	Yes	Yes
Sync folders with single mouse click	Yes	Yes	Yes	Yes
SyncDB automatically handles file time, size and time zone differences between local and server disks	Yes	Yes	Yes	Yes
Sync Preview - show files to be transferred in tree view	Yes	Yes	Yes	Yes
Fast Multithreaded operation	max 10 threads	max 10 threads	max 25 threads	max 25 threads
One-way syncs make target identical with source	Yes	Yes	Yes	Yes
Two-way syncs transfers newer files in either direction	Yes	Yes	Yes	Yes
Include filters	Yes	Yes	Yes	Yes
Exclude filters	Yes	Yes	Yes	Yes
Filter by file/folder name, size, date modified, attributes	Yes	Yes	Yes	Yes
Use regular expressions in filters	Yes	Yes	Yes	Yes
Rules to handle conflicts	Yes	Yes	Yes	Yes
Recursively sync folders	Yes	Yes	Yes	Yes
Optionally delete extra files on target	Yes	Yes	Yes	Yes
AutoResume interrupted and failed transfers	unlimited times	unlimited times	unlimited times	unlimited times
AutoReconnect	unlimited times	unlimited times	unlimited times	unlimited times
Firewall & proxy support	Yes	Yes	Yes	Yes
Server timezone adjustment	Yes	Yes	Yes	Yes
Extensive logging options	Yes	Yes	Yes	Yes
Automatic log file rotation	Yes	Yes	Yes	Yes
Multiple auto-rotation schemes	Yes	Yes	Yes	Yes
Sync tasks are saved to ASCII files, making them easy to copy/duplicate/manage	Yes	Yes	Yes	Yes
Each sync task has its own set of options, like filters, max retries, timeouts, number of threads, logging etc.	Yes	Yes	Yes	Yes
Schedule sync tasks	-	-	Yes	Yes
Run scheduled tasks as service	-	-	Yes	Yes
Email notifications on success/on errors	-	-	Yes	Yes
Run sync tasks from command line, e.g. in batch files	-	-	Yes	Yes
Run multiple sync tasks simultaneously	-	-	Yes	Yes
Run sequence of sync tasks in succession	-	-	Yes	Yes

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Part III

System Requirements, Installation, and Uninstallation

3 System Requirements, Installation, and Uninstallation

3.1 System Requirements

BatchSync requires Windows 8.x, 7, Vista, XP, or 2000, or Windows Server 2012, 2008, 2008 R2 or 2003.

3.2 Installation

- Download the BatchSync executable install file.
- Run the executable to start the installer program. This installer will configure BatchSync to run on your computer.
- Follow the instructions on the screen to complete the installation.
- After the installation is complete, you will find the BatchSync Task Editor-item in the Windows Start-menu at the Start > All Programs > BatchSync sub-menu.

Related

- Upgrading from 2.x
- Getting started in 5 minutes
- Getting Started

3.3 Upgrading from 2.x

Installation

You can install the new 4.0 version over an existing 2.x version without uninstalling 2.x first. But before you do that, make a backup of existing sync tasks. To make a backup, copy all *.STF and *.SDB files from your current sync task folder to a safe place. Like this:

- `Copy C:\ProgramData\Sync\*.* C:\Safe`

Old sync tasks can be used as-is, and further edited with 4.0. But after editing, you CANNOT use the same sync tasks with an older version. Rather, you need to restore them from the backup.

Notice! If you get an error message when trying to edit a 2.x sync task, or after completing a sync run, this is due to changes in the permission settings for sync task files. Please read more about this below.

The new 4.0 version cannot be installed in parallel with an older 2.x version, as the new version replaces the existing installation. So if you want to test the 4.0 version, and keep your existing 2.x installation intact, you need to install 3.0 on a separate computer.

Upgrade pricing - Get 50% Off

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If you are a licensed user of the 2.x version of BatchSync or InstantSync, you are entitled to special upgrade pricing. Please read more about this on our web site.

Errors when using old 2.x sync task

If you get the error message "Path/File access error" when trying to save a sync task after editing, or after completing a sync run, you need to manually change the permission settings for the sync task (*.STF) and SyncDB files (*.SDB). To change the permissions for multiple files, you need an elevated command prompt.

1. Click Start-menu
2. Type: cmd
3. Right-click **cmd.exe** when it shows up under programs
4. Select Run as administrator
5. Change to the folder where your sync tasks are located, like CD C:\ProgramData\Sync
6. Now enter the following command:

```
icalcs *.* /inheritance:e
```

Now all of the files should inherit their security settings from the parent folder.

Known problem with Windows Vista Task Scheduler

We have received numerous error reports about Windows Vista Task Scheduler not working the way it should. The scheduler history displays an error message like this:

```
Task Scheduler failed to start "\Sync UploadFiles" task for user "SysServer\Alan".
Additional Data: Error Value: 2147943726.
```

This error message means that Task Scheduler has lost the user credentials for the task, and therefore it cannot start the task. Mostly this occurs after system reboot or when updating the system with security patches. The fix is to open task for editing, save changes and enter username and password again when prompted. This way username and password is properly saved with the task again. This is a known problem with Windows Vista.

3.4 Upgrading from 3.x

Installation

You can install the new 4.0 version over an existing 3.x version without uninstalling 3.x first. But before you do that, make a backup of existing sync tasks. To make a backup, copy all *.STF and *.SDB files from your current sync task folder to a safe place. Like this:

- `Copy C:\ProgramData\Sync\*.* C:\Safe`

Old sync tasks can be used as-is, and further edited with 4.0. But after editing, you CANNOT use the same sync tasks with an older version. Rather, you need to restore them from the backup.

The new 4.0 version cannot be installed in parallel with an older 3.x version, as the new version replaces the existing installation. So if you want to test the 4.0 version, and keep your existing 3.x installation

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intact, you need to install 4.0 on a separate computer.

Upgrade pricing - Get 50% Off

If you are a licensed user of the 3.x version of BatchSync or InstantSync, you are entitled to special upgrade pricing. Please read more about this on our web site.

3.5 Uninstallation

Click Windows Start-menu > All Programs > BatchSync > Uninstall.

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Part IV

Getting Started

4 Getting Started

4.1 Overview

This short introduction gives you a general overview of the BatchSync components and terms. Please read this first, and then continue with the Getting started in 5 minutes, or the more detailed Step-by-step instructions for creating and fine tuning a new sync task.

Synchronizing Folders

BatchSync is designed to make folder sync as fast and simple as possible. Synchronizing folders is a matter of selecting the sync task and clicking the Sync-button. But before this, you need to create the sync task.

Sync Task

BatchSync stores all of the information needed to run a sync in a sync task file. This file contains the source and target folders, the server address, login username, password, and all of the other options for the sync task. Each task is saved to a separate file with an .STF extension, e.g., UploadWebSite.STF and BackupLogFiles.STF.

Creating sync tasks with Task Editor

Sync tasks are created with the Task Editor software. It allows you to set up the folder names, server address, username, password, filters, and other options via an easy to use interface. You also use Task Editor for managing the tasks (edit, delete, duplicate) and previewing and running them. The easiest way to create a new sync task is by using the Task Wizard.

Sync Preview

You can test the sync task with Sync Preview. Sync preview displays the files that would be transferred, in a tree view format, without actually transferring anything. This helps you to test sync tasks and their options, like filters. You can also directly access and modify task options via a right-click popup menu in the Sync Preview-window.

Running sync tasks with Task Editor

Task Editor displays a list of the task files in the selected folder. You can run a sync task by selecting its icon and clicking the Sync-button. Thanks to the SyncDB smart file tracking feature, the software knows which files have changed and transfers only the necessary files. The Sync window displays the progress of the transfer and provides a report on all the files transferred and statistics about the transfer.

History log

The global run history log contains run info and statistics about all of the sync tasks that were run on

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that computer. You can view this history log by clicking the History button on the left hand side of the main window. This log is shared by all tasks.

Running sync tasks in batch mode

Notice! Batch mode and task scheduling is ONLY available in the BatchSync product. It is not possible to schedule tasks with InstantSync.

As its name implies, BatchSync was designed to be run as a batch run, in the unattended mode. Most often this means running it automatically as a scheduled task, at predefined times or intervals. BatchSync includes multithreaded command line software (Sync.exe), which is used to run sync tasks in the unattended mode. Sync.exe does not have any user interface, but it updates the History log in Task Editor that you can use to track the files it transfers, and can optionally send reports and error logs via email. To run the sync task in the command line, change to the BatchSync install folder and enter:

```
Sync C:\Tasks\UploadWebSite.STF
```

This command loads the UploadWebSite.STF task file and performs the sync process using the parameters and options defined in the task file.

Scheduling a sync task

Sync tasks are scheduled using Windows Task Scheduler. You can run Task Scheduler via Control Panel, by double-clicking the Task Scheduler-icon. The sync task is set up to run in the same way as running it on the command line (see example above). You can have multiple schedules for a single task, like running it daily at 2pm and weekly on Friday at 8pm. Or setting it up to run once every 5 minutes on Monday-Friday between 7am-5pm.

The scheduled tasks are run by the Task Scheduler service, so they are executed even when nobody is logged in to the computer. Therefore you need to enter the user account and password that is used to run the sync process when setting up the schedule.

Scheduling multiple tasks simultaneously

You can schedule multiple separate sync tasks to be run simultaneously. Each of these tasks can make multiple simultaneous connections to the server (multithreaded). The number of simultaneous tasks is limited by the available computer memory (RAM). Task Scheduler makes sure that it does not start the next instance of the same task before an earlier one is completed. Therefore you can schedule a task to be executed every 5 mins, even if it sometimes takes 12 mins to run. Task Scheduler then runs it when the earlier instance has finished.

Related:

- Getting started in 5 minutes
- Step-by-step instructions - creating a new sync task.
- Step-by-step instructions - scheduling a task
- Scheduling and batch files

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4.2 Getting started in 5 minutes

In this short tutorial, we create a new sync task for uploading the content of a local folder to an FTP server. Usually, this kind of sync task is used to update a website or create off-line backups. This sync task will upload all new and changed files to the FTP server, making the source and target folders identical.

About Sync Tasks

BatchSync stores all of the information needed to run a sync in a sync task file. This file contains the source and target folders, the server address, login username, password, and all of the other options for the sync task. Each task is saved to a separate file with an .STF extension, e.g., UploadFiles.STF and BackupLogFiles.STF.

The sync task details are:

Source

- Local Folder: **C:\WebRoot**

Target

The /httpdocs is the target folder on the server. In addition to this, we need the server address and login parameters.

- Remote server address: **ftp.mysite.com**
- Remote server folder: **/httpdocs**
- Login Username: **userxyz**
- Login Password: **secret**

Notice! When you create a new sync task with Task Wizard, you can edit any of the sync task settings later, after the wizard is through.

Step 1. To create a new sync task, start the Task Wizard by clicking the Wizard button on the toolbar, or select the button in Welcome-pane.

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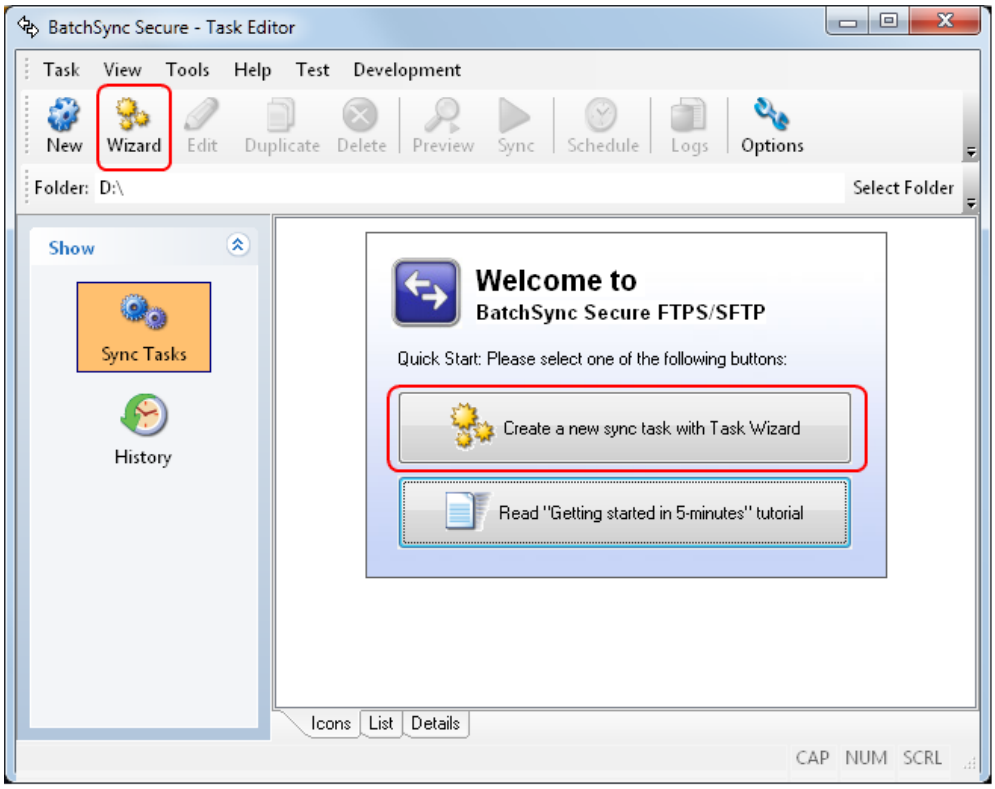
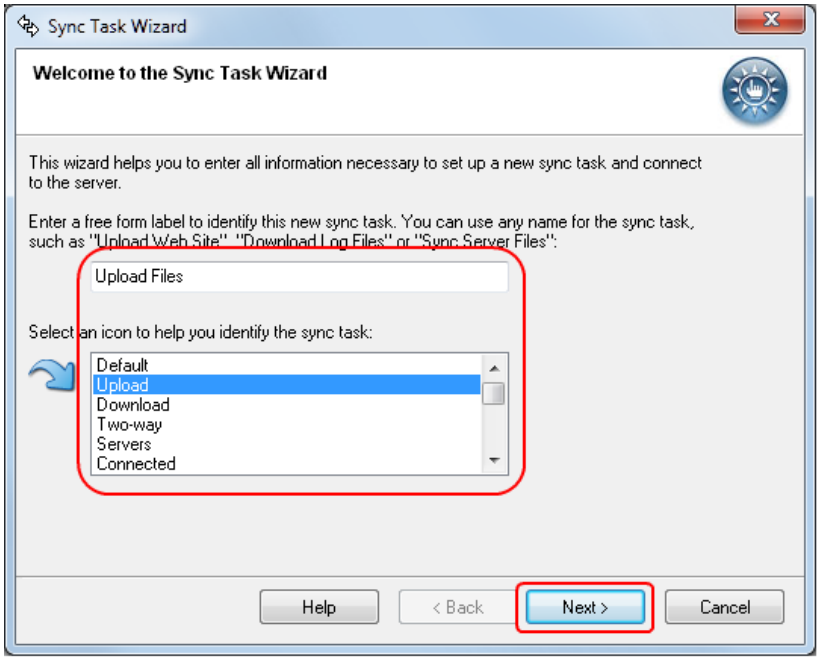

BatchSync Secure - Task Editor
Task View Tools Help Test Development
New Wizard Edit Duplicate Delete Preview Sync Schedule Logs Options
Folder: D:\
Select Folder
Show
Sync Tasks
History
Welcome to
BatchSync Secure FTPS/SFTP
Quick Start: Please select one of the following buttons:
Create a new sync task with Task Wizard
Read "Getting started in 5-minutes" tutorial
Icons List Details
CAP NUM SCRL

Step 2. Enter the sync task name and select an icon for it. The name can be any free form text you choose. Then click the Next button.


Sync Task Wizard
Welcome to the Sync Task Wizard
This wizard helps you to enter all information necessary to set up a new sync task and connect to the server.
Enter a free form label to identify this new sync task. You can use any name for the sync task, such as "Upload Web Site", "Download Log Files" or "Sync Server Files":
Upload Files
Select an icon to help you identify the sync task:
Default
Upload
Download
Two-way
Servers
Connected
Help
< Back
Next >
Cancel

Step 3. We want files to be uploaded from the local folder to the server, so select the **Upload files to the server (one-way sync)**-option. This creates a one-way sync, where all of the new and changed files

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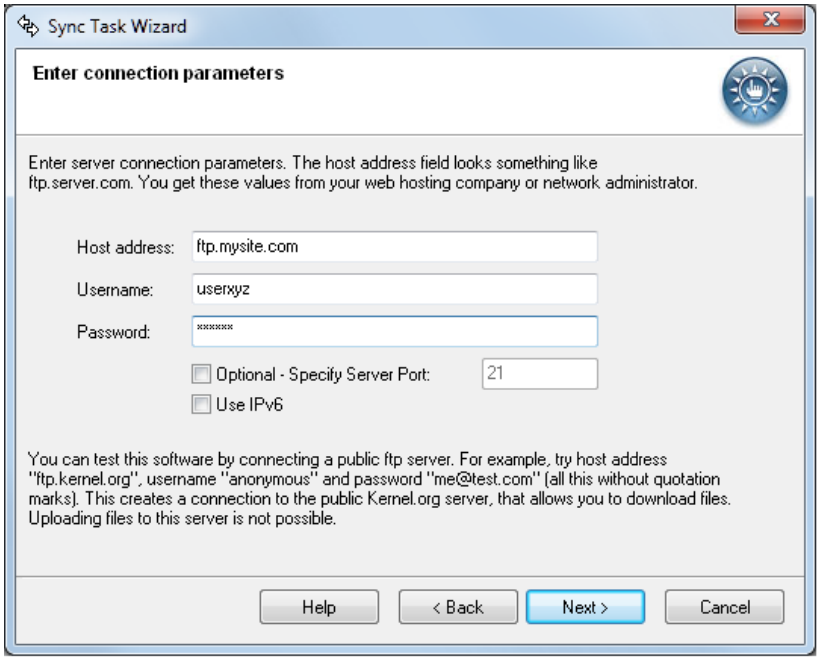
found on the local source folder are transferred to the remote target folder. Click the Next button.

Step 4. Select the source folder, in this example it is C:\WebRoot. Optionally, you can use date variables as part of the folder name. You can find more information about date variables here. Then click the Next button.

Step 5. To make a connection to the server, enter the server address and login credentials and click the Next button.


Sync Task Wizard
Enter connection parameters
Enter server connection parameters. The host address field looks something like ftp.server.com. You get these values from your web hosting company or network administrator.
Host address:
ftp.mysite.com
Username:
userxyz
Password:
****
Optional - Specify Server Port:
21
Use IPv6
You can test this software by connecting a public ftp server. For example, try host address "ftp.kernel.org", username "anonymous" and password "me@test.com" (all this without quotation marks). This creates a connection to the public Kernel.org server, that allows you to download files. Uploading files to this server is not possible.
Help
< Back
Next >
Cancel

Step 6. Task wizard will now make a connection to the server. When you are connected, simply click the Next button.

Step 7. Select the target folder on the server by double-clicking the folder name. After double-clicking, the selected folder name is show at the top. Click the Next button.

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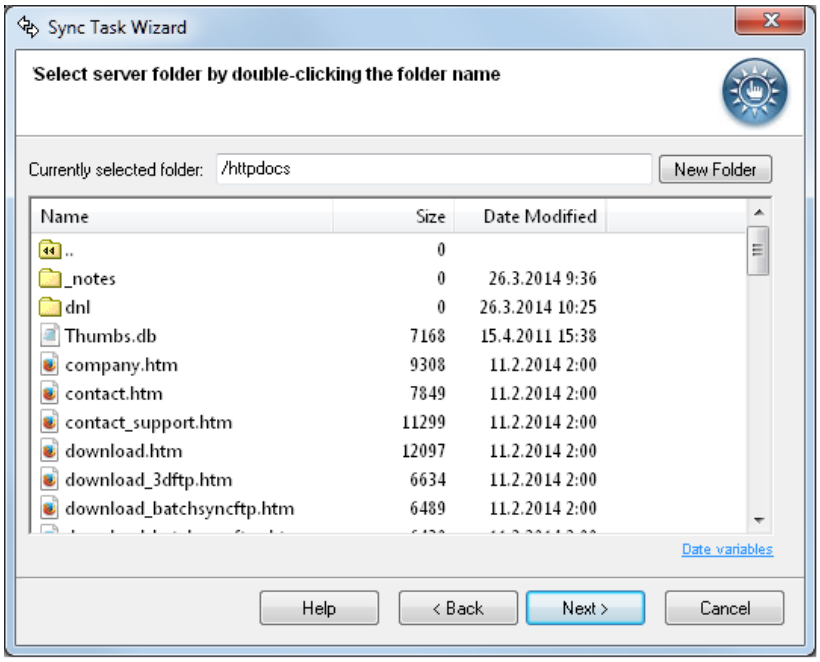
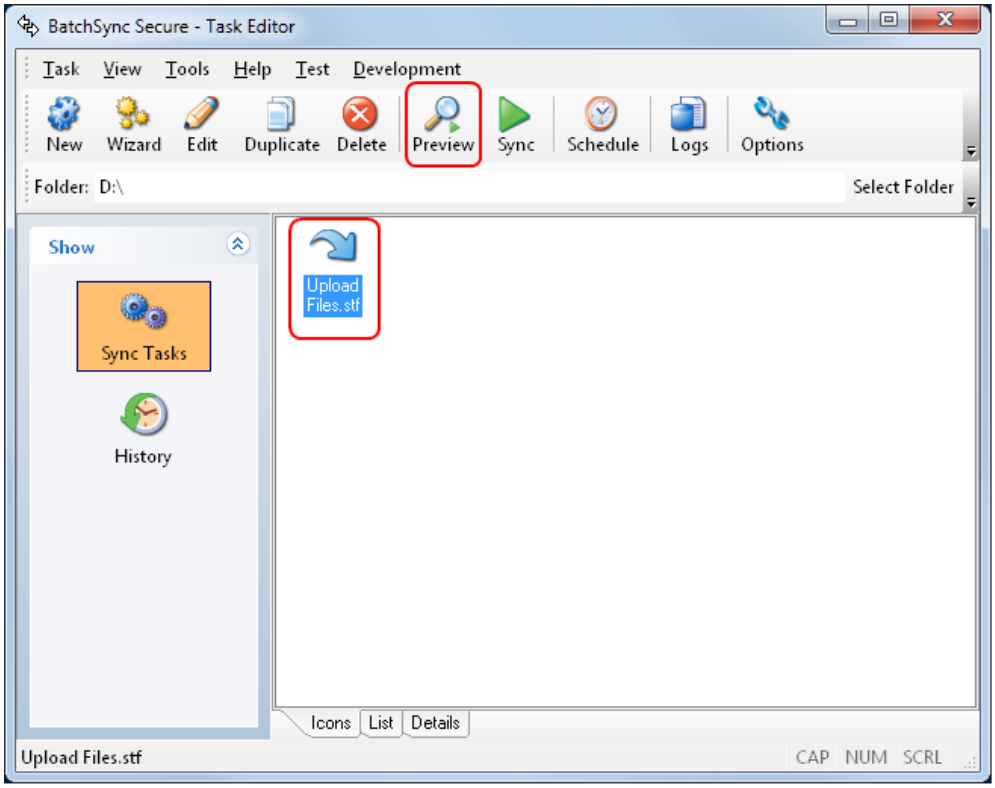
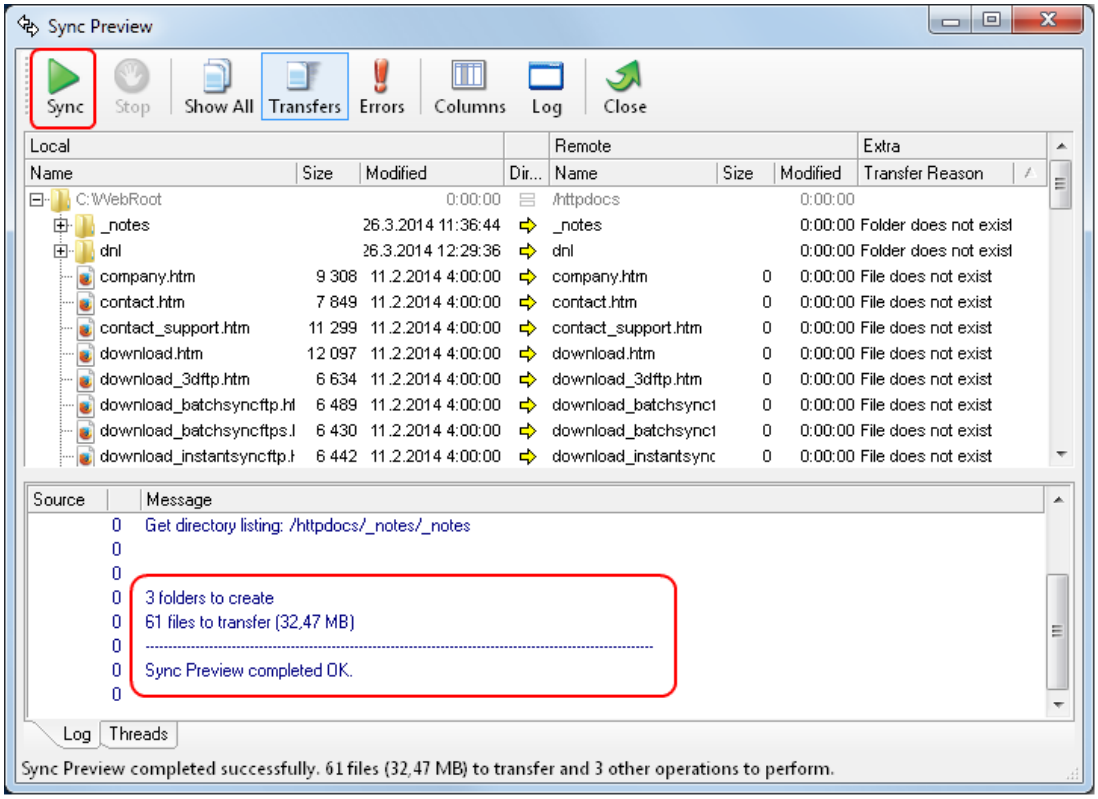


Step 8. You have now completed the wizard. Simply click the Finish button to save the new task.

Step 9. The new sync task has now been created, and is shown in the Task Editor. Select it, and start Sync Preview to make sure that the new sync task performs the way it should. No files are transferred when doing a sync preview.



Step 10. A list of the files that will be transferred is shown after the preview is done. You can see the transfer statistics in the Log pane. To perform the actual sync, and upload files, click the Sync button on the toolbar.



Step 11. The sync is now complete, and all of files from the local C:\WebRoot have been uploaded to the remote /httproot folder.

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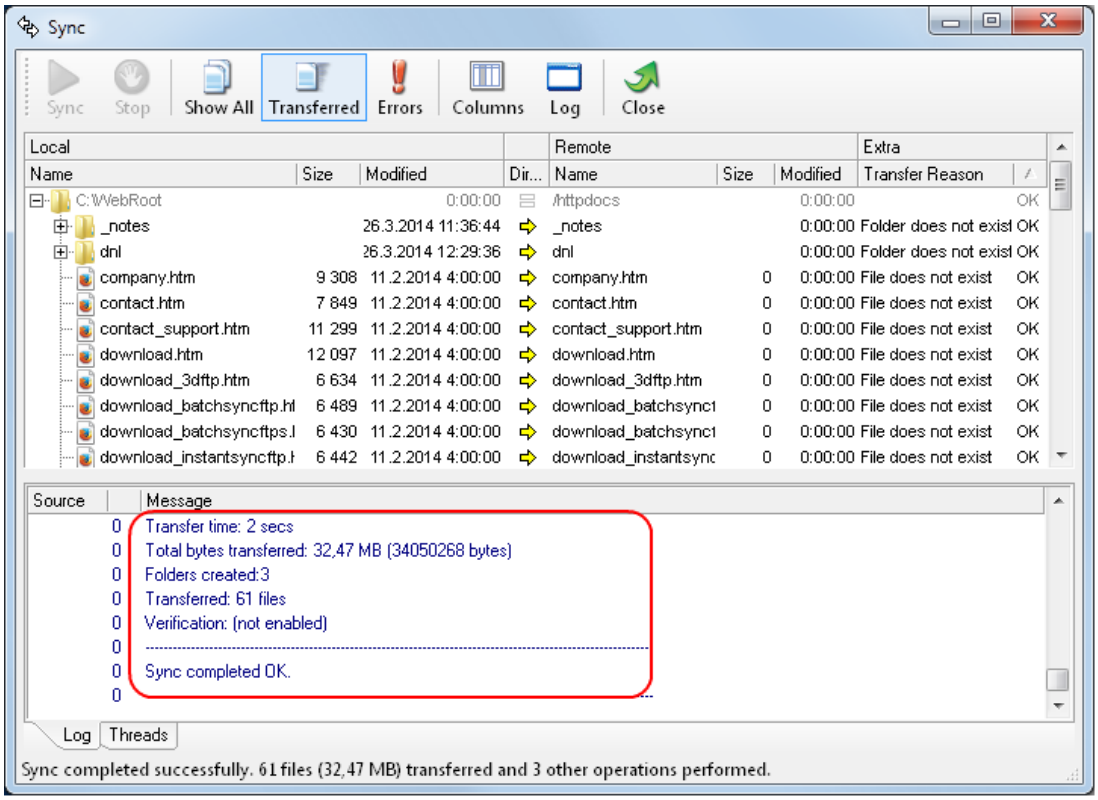

Step 12. This is the end of the Getting Started in 5 minutes tutorial

Now you have created the new sync task "Upload Files.stf". This sync task contains all of the necessary details for performing a local -> remote file synchronization. So after editing local files in C:\WebRoot, you simply repeat steps 9 and 10 to upload all of the changes to the server.

When you need to further fine tune the sync options, select the sync task in the Task Editor window, and click the Edit Task button. You can find more information about editing a task and setting up file filtering in the Step-by-step instructions tutorial.

4.3 Step-by-step instructions

4.3.1 Creating a new sync task

If you are just getting started with BatchSync, we recommend that you create your first sync task with the Task Wizard. You can find more information about it here.

In this step-by-step tutorial we create a new sync task for uploading a local web site to an FTP server. In this scenario we are building and editing a web site locally in the C:\WebRoot folder. All additions and changes we want to make to the web site are made to this local copy, and then we use the BatchSync sync task to upload changes to the FTP server, to the web site root folder. In this way we can test the changes locally before actually publishing them to the Internet. BatchSync makes sure that all new and modified files are successfully uploaded when it's time to publish new info to the net.

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Task Details

First we need to collect some background information about files, folders and server connection parameters. All source files are under the local folder C:\WebRoot. It contains numerous subfolders that we want to be included in the sync.

Source

- Local Folder: **C:\WebRoot**

Target

The web site root directory on the server is the /httpdocs folder. In addition to this, we need the server address and login parameters.

- Remote server address: **ftp.mysite.com**
- Login Username: **userxyz**
- Login Password: **secret**
- Remote server folder: **/httpdocs**

As we are making all of our modifications to the local folder, we want the target to be an exact copy of it, so we want a One-way sync.

Extra details

We have almost all we need, only some extra info is needed: We use popular DreamWeaver software for creating and editing web pages in C:\WebRoot. It creates some extra files and folders that we do not want to upload to the web site. So we need to exclude some files and folders:

- Exclude all folders that start with the _ character (folders like _Notes).
- Exclude folders with the names **Library** and **Templates**. These are DreamWeaver generated folders that we don't want to upload
- Exclude the file **Thumbs.db** as this is a file that Windows automatically generates for showing preview thumbnails in Explorer and we don't want to upload that.

Now we have all the information we need. So let's start creating the sync task to make uploading easy.

Next Step

Start Task Editor

4.3.2 Start Task Editor

All task editing is done with the BatchSync Task Editor software. To create a new task, first start Task Editor. By default it can be found in the Windows Start-menu:

Windows 7 or newer:

Start-menu > All Programs > BatchSync **>** BatchSync **Task Editor**

Older:

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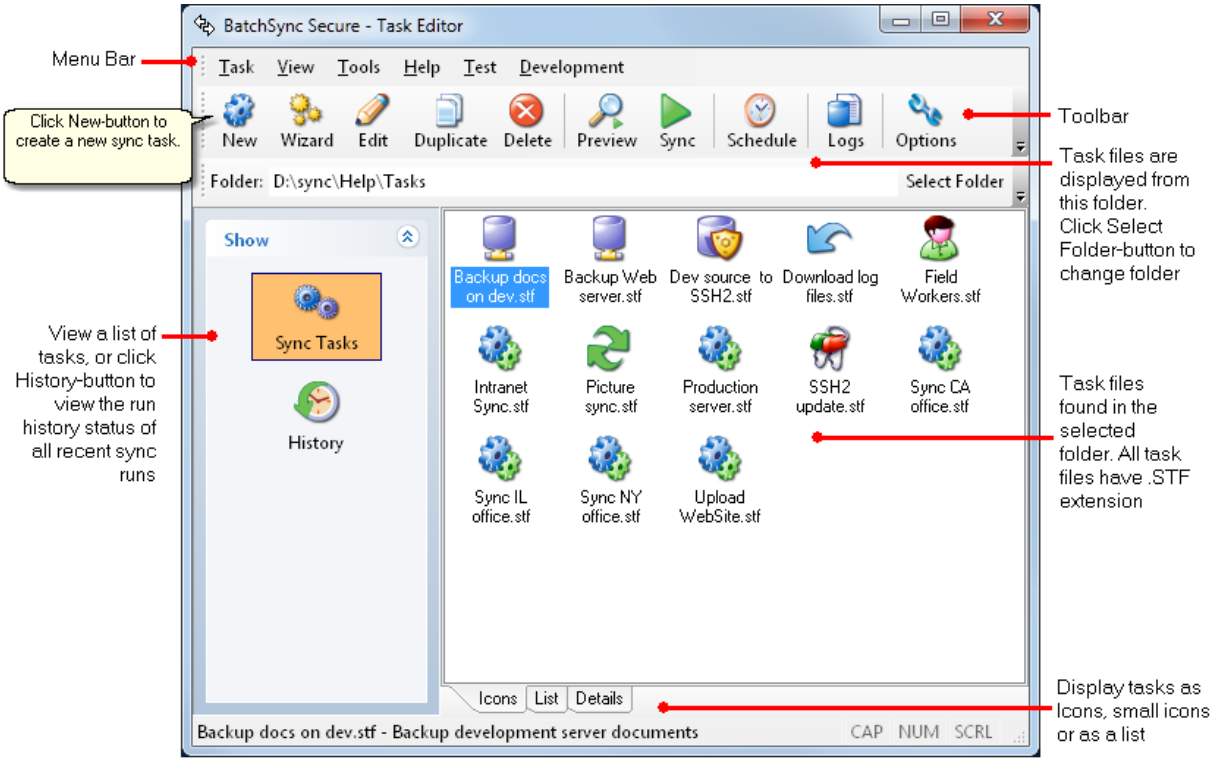
Start-menu > Programs > BatchSync **>** BatchSync **Task Editor**

Next Step

Task Editor user interface

4.3.3 Task Editor user interface

When you start BatchSync, the screen will look like this (Note: this screen shot displays multiple task icons, but when running Task Editor for the first time, no icons are shown, as there are no tasks yet to display):


Menu Bar
Click New-button to create a new sync task.
View a list of tasks, or click History-button to view the run history status of all recent sync runs
BatchSync Secure - Task Editor
Task View Tools Help Test Development
New Wizard Edit Duplicate Delete Preview Sync Schedule Logs Options
Folder: D:\sync\Help\Tasks
Select Folder
Show
Sync Tasks
History
Backup docs on dev.stf
Backup Web server.stf
Dev source to SSH2.stf
Download log files.stf
Field Workers.stf
Intranet Sync.stf
Picture sync.stf
Production server.stf
SSH2 update.stf
Sync CA office.stf
Sync IL office.stf
Sync NY office.stf
Upload WebSite.stf
Icons List Details
Backup docs on dev.stf - Backup development server documents
CAP NUM SCRL
Toolbar
Task files are displayed from this folder. Click Select Folder-button to change folder
Task files found in the selected folder. All task files have .STF extension
Display tasks as Icons, small icons or as a list

To create a new task, click the New-button.

Next Step

Entering task parameters

4.3.4 Entering task parameters

The New Task-window opens. This window has multiple tabs in the top row, but at this stage you do not need to know them all, just look at the fields highlighted in the screenshot.

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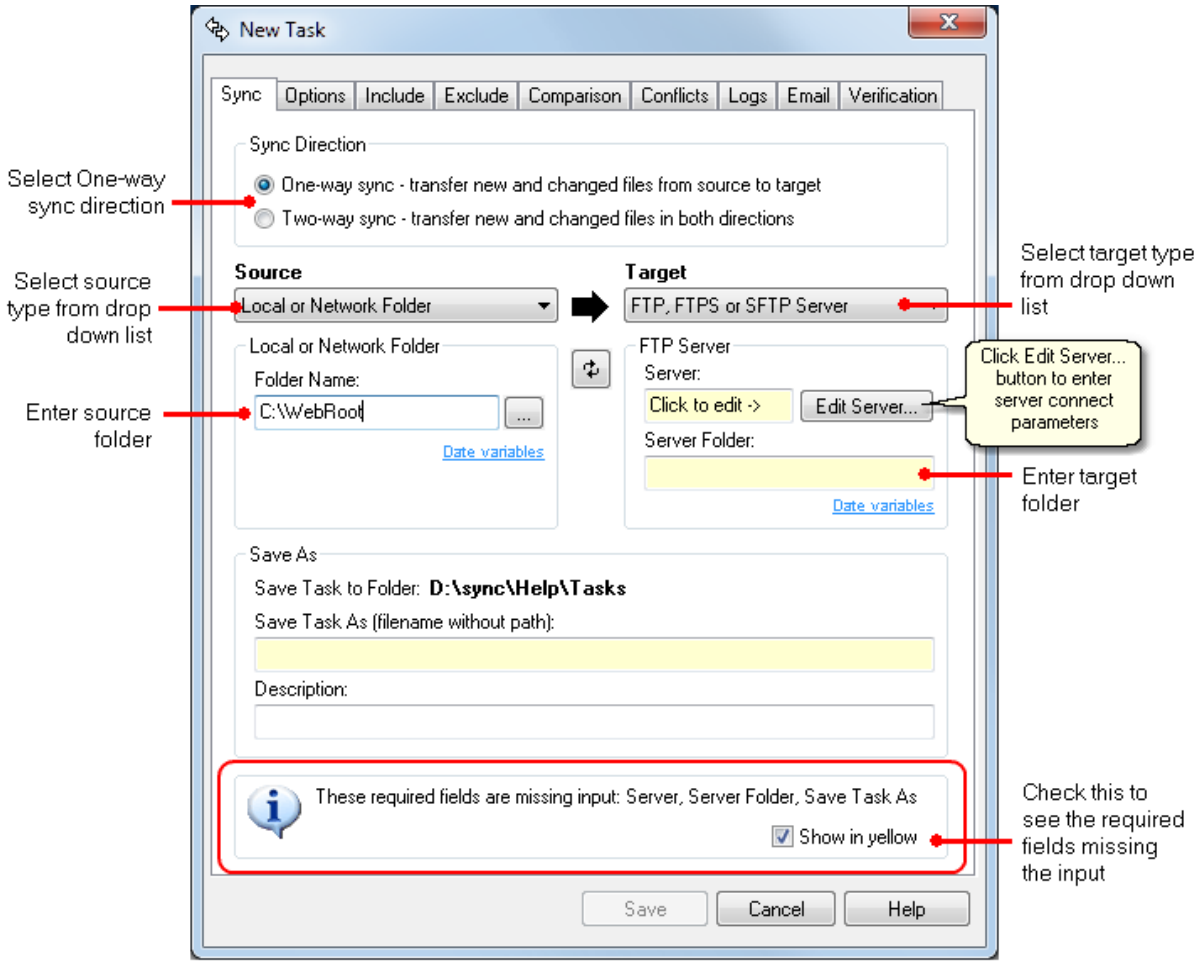

Make selections and enter the values as indicated above. Here we have selected that we want to upload files from a local folder to the FTP server, and entered the source and target folders. Next click the Edit Server... button to enter the target server connection parameters (like server address, username and password). The following screen opens:

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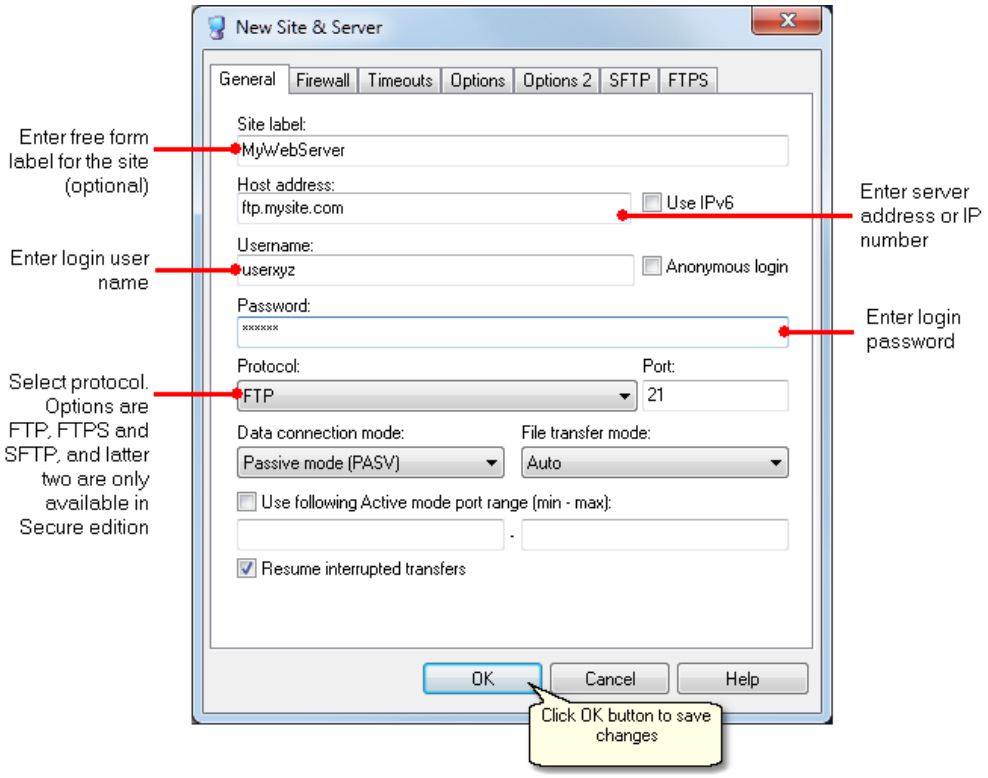

Enter values for the server connection. The Options-tab contains more settings for fine tuning the connection, but for now we can leave those settings at the default values. Click the OK-button to close this window. This takes you back to the New Task-window:

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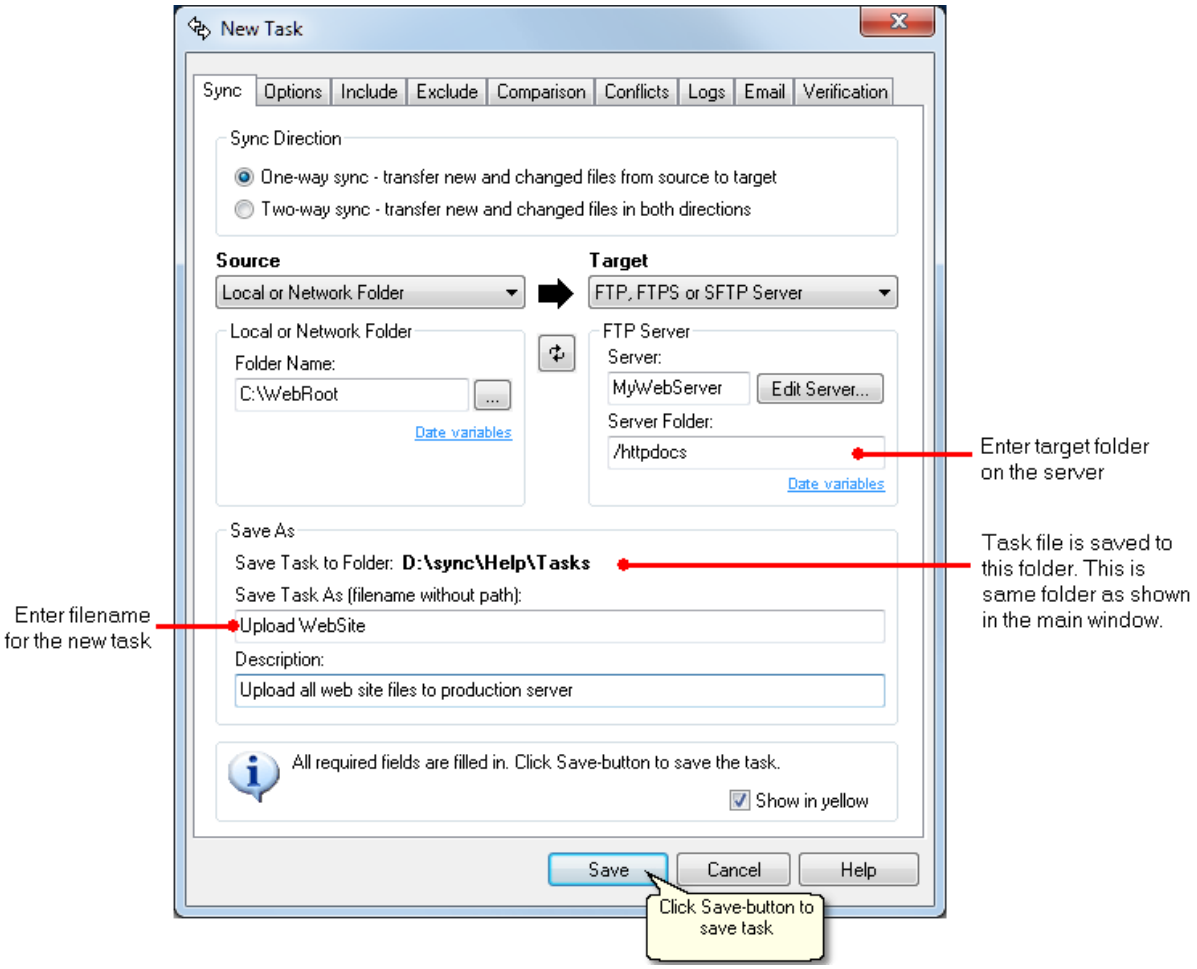

We have now entered all the basic settings for the sync task. To save it, we need to give it a descriptive filename. Do not enter a path, as the task is saved to the same folder that was active when we opened this window. You cannot change the folder here, but you can later copy, rename and move task files with Windows Explorer just as with any text file. The .STF extension is appended automatically.

After entering the filename, close this window by clicking the Save-button.

Next Step

Previewing the task results

4.3.5 Previewing task results

We saved our new task with the **Upload WebSite.Stf** filename. This new task is listed in the main window as an icon, along with other tasks in the same folder. To verify that the server connect parameters and folder names were entered correctly, and that the connection to the server works as intended, it's best to run Sync Preview. To run Sync Preview, select a task icon in the main window and click the Preview-button.

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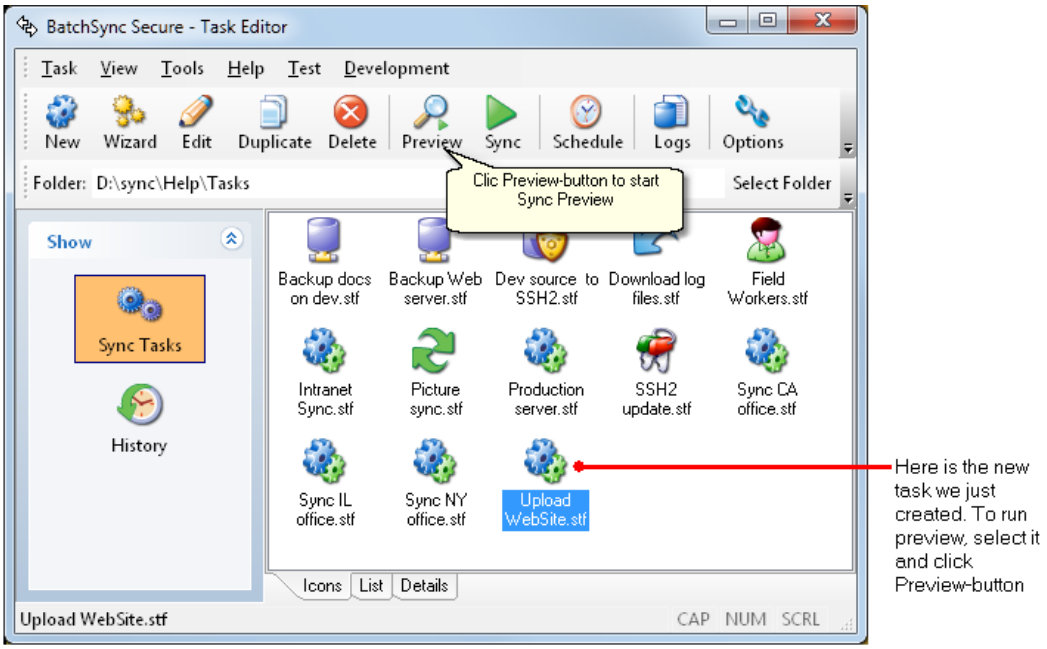
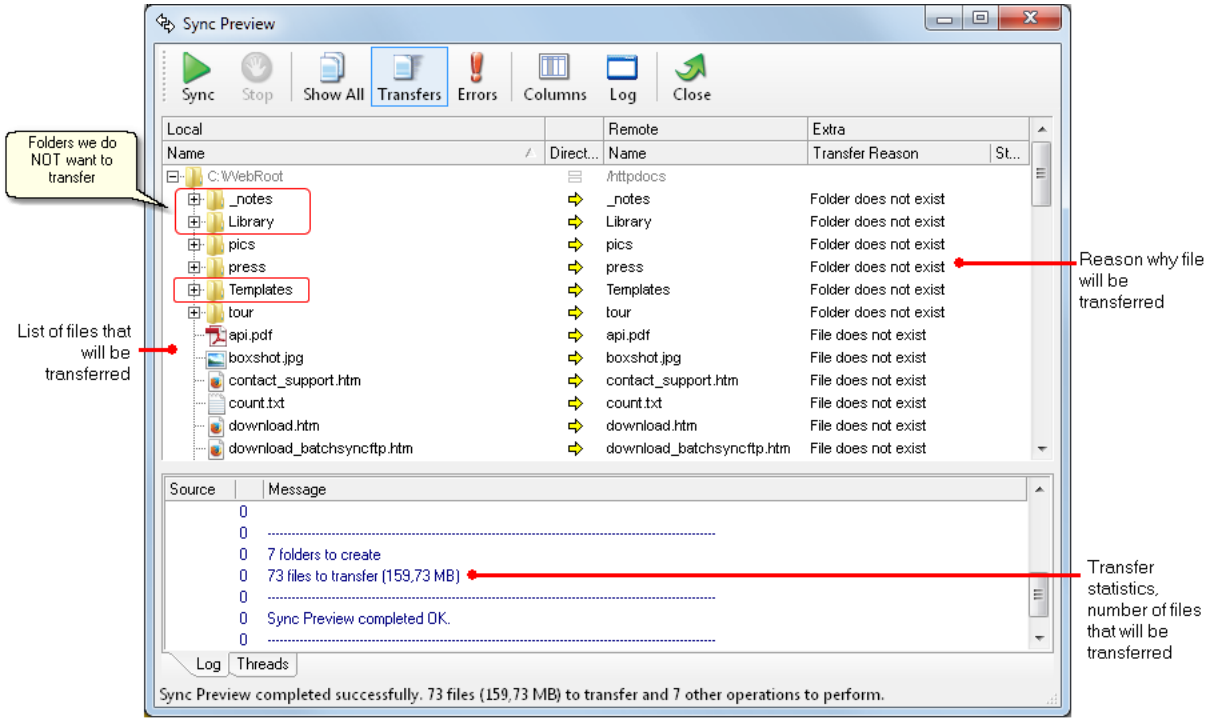


Sync Preview works exactly like the normal Sync, but **no actual files are transferred**, and **no folders are created neither source nor target**. Sync Preview makes a connection to the server, processes local files and compares them to the remote ones, and shows a list of files that will be transferred in Sync. Sync Preview is the perfect tool for fine tuning sync parameters, editing filters, and seeing filters and other options in action. In our example case here, the server does not yet contain any files, so all the files would be transferred and are shown in Preview window. The screen looks like this:



Everything looks quite good. All the files are there, but there are some extra ones. In the start of this tutorial we listed some folders that we don't want to transfer. So we want to filter out the **_notes**, **Library** and **Templates** folders and the **Thumbs.db** file from all folders.

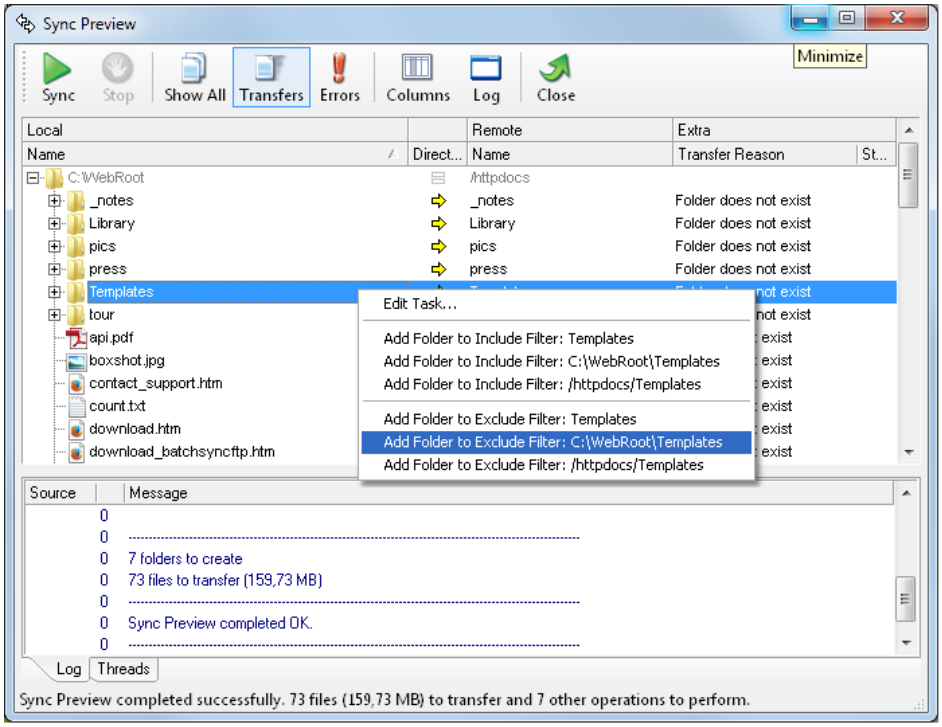
To filter out files and folders, we need to add an Exclude-filter to this task.

Next Step

Editing a task, adding filters

4.3.6 Editing a task, adding filters

To add a filter to the task while the Sync Preview window is open, right-click the mouse on top of **Templates** folder. The following popup menu is displayed:



In the popup menu you can choose to add include and exclude filters with or without a path appended. As we want to exclude a selected folder, with a specific path, select the highlighted entry in the menu. The Edit Task-window opens and the **C:\WebRoot\Templates** text is automatically appended to the exclude folder text field:

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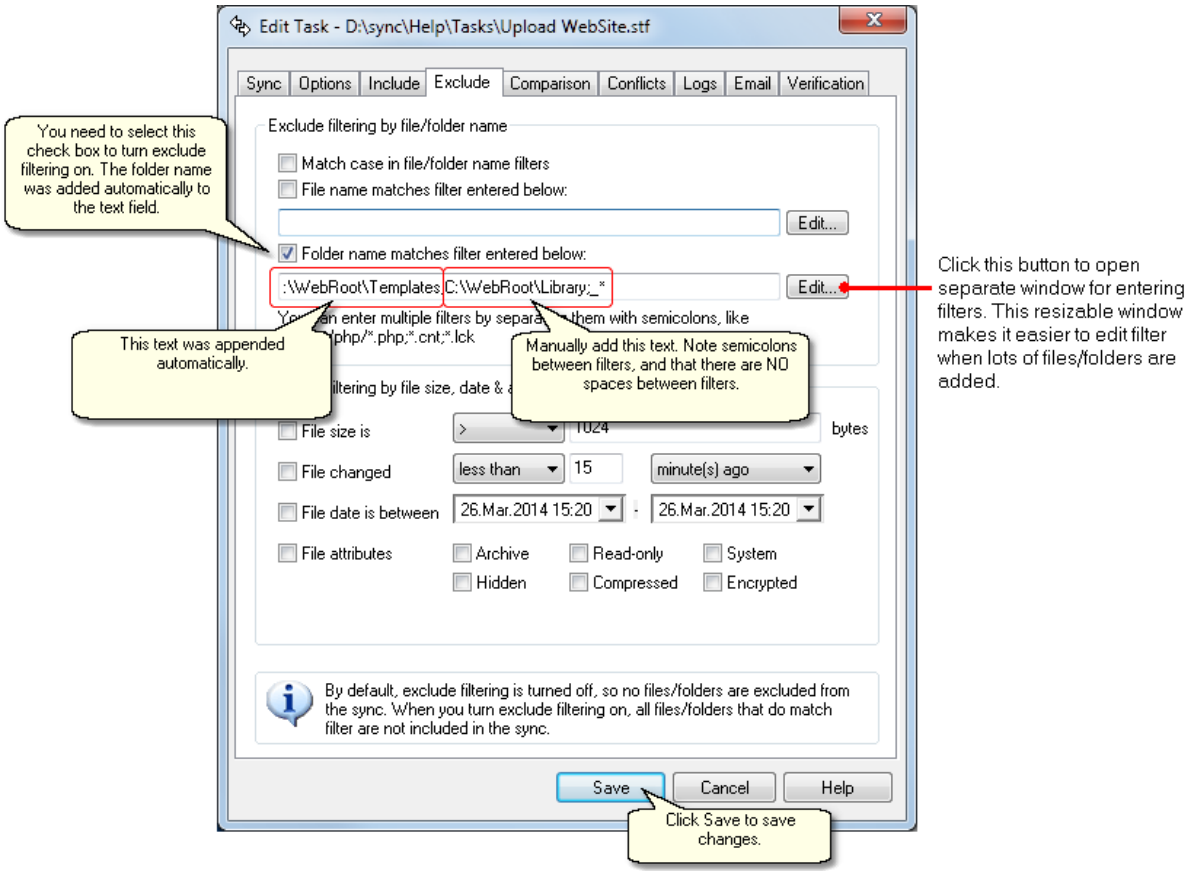
Edit Task - D:\sync\Help\Tasks\Upload WebSite.stf
Sync
Options
Include
Exclude
Comparison
Conflicts
Logs
Email
Verification
Exclude filtering by file/folder name
Match case in file/folder name filters
File name matches filter entered below:
Edit...
Folder name matches filter entered below:
:\WebRoot\Templates
C:\WebRoot\Library;_*
Edit...
You need to select this check box to turn exclude filtering on. The folder name was added automatically to the text field.
This text was appended automatically.
Manually add this text. Note semicolons between filters, and that there are NO spaces between filters.
Click this button to open separate window for entering filters. This resizable window makes it easier to edit filter when lots of files/folders are added.
File size is
1024
bytes
File changed
less than
15
minute(s) ago
File date is between
26.Mar.2014 15:20
26.Mar.2014 15:20
File attributes
Archive
Read-only
System
Hidden
Compressed
Encrypted
By default, exclude filtering is turned off, so no files/folders are excluded from the sync. When you turn exclude filtering on, all files/folders that do match filter are not included in the sync.
Save
Cancel
Help
Click Save to save changes.

While the Edit Task-window is open, you can manually add entries to the exclude text fields, so edit the field to contain the text:

```
C:\WebRoot\Templates;C:\WebRoot\Library;_*
```

Here we combine 3 filters that are separated with semicolons (and note, that there are NO spaces between them). The last entry is

```
_*
```

without any path. This filter will exclude the _Notes folder and all other folders that start with the _ character (like _System, _Comments etc.). You can later read more about filters and pattern matching.

Click the Save-button to save your changes and close this window. Now you are back in the Sync Preview-window.

Add Thumbs.db exclude filter

Scroll down to the Thumbs.db file in the Sync Preview-window. Right-click on it and select Exclude: Thumbs.db from the list. This time we selected the filename WITHOUT any path, as we want to exclude this file in all folders.

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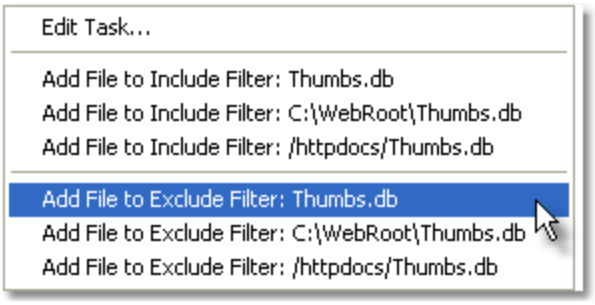
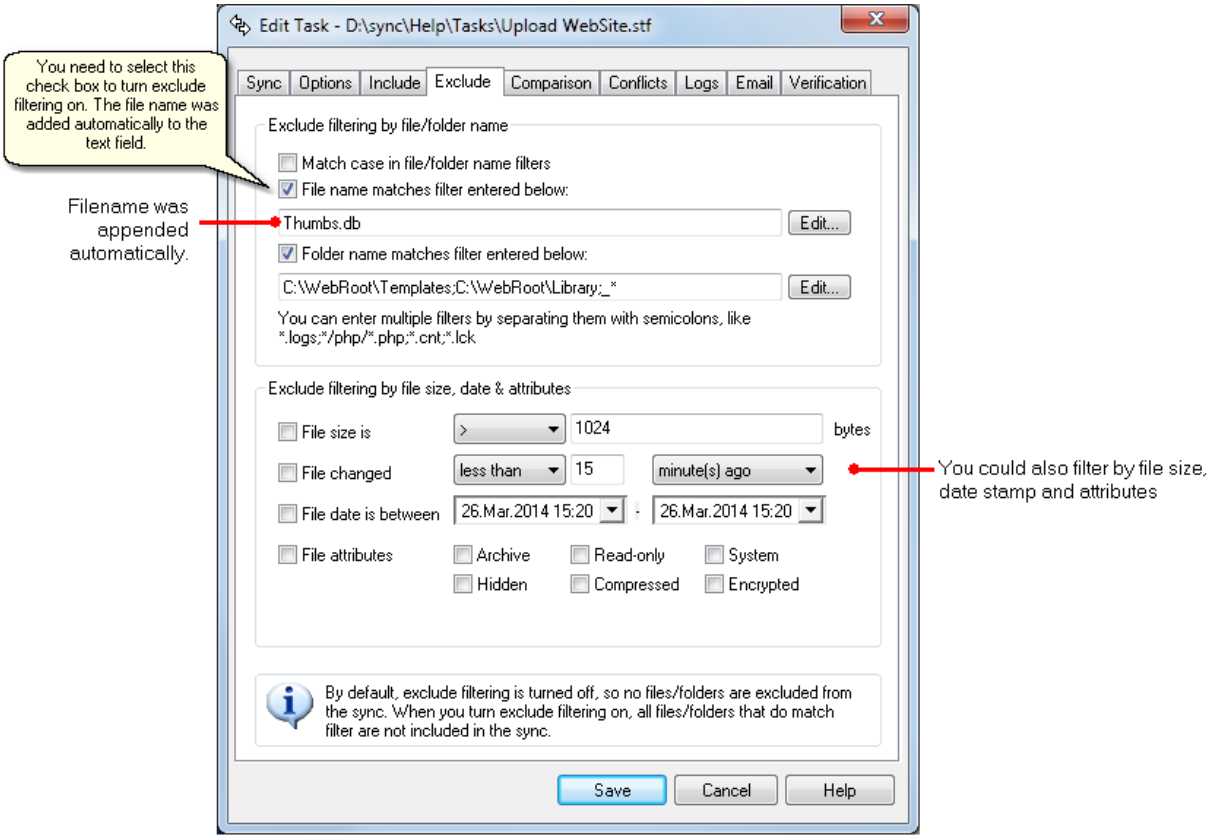

Edit Task...
Add File to Include Filter: Thumbs.db
Add File to Include Filter: C:\WebRoot\Thumbs.db
Add File to Include Filter: /httpdocs/Thumbs.db
Add File to Exclude Filter: Thumbs.db
Add File to Exclude Filter: C:\WebRoot\Thumbs.db
Add File to Exclude Filter: /httpdocs/Thumbs.db

The Edit Task-window opens, and the **Thumbs.db** text is automatically appended to the exclude text-field:



Thumbs.db is added to the exclude filter without any path. This means that all files having this name, in any folder, are excluded from the sync. This is convenient, as the Thumbs.db file is automatically added to all folders that are viewed with Windows Explorer in the thumbnails-mode. This filter ensures that they are never uploaded to the web server.

Optional - Turn Logging On

All of the performed sync runs are automatically listed in the main window History pane. The sync task history entries contains sync run statuses, like "OK" or "Errors," plus numerous statistics about each sync run. You can also view a list of the files transferred for each sync run. However, if this automatically generated history log information is not enough, you can turn Extra Logging on.

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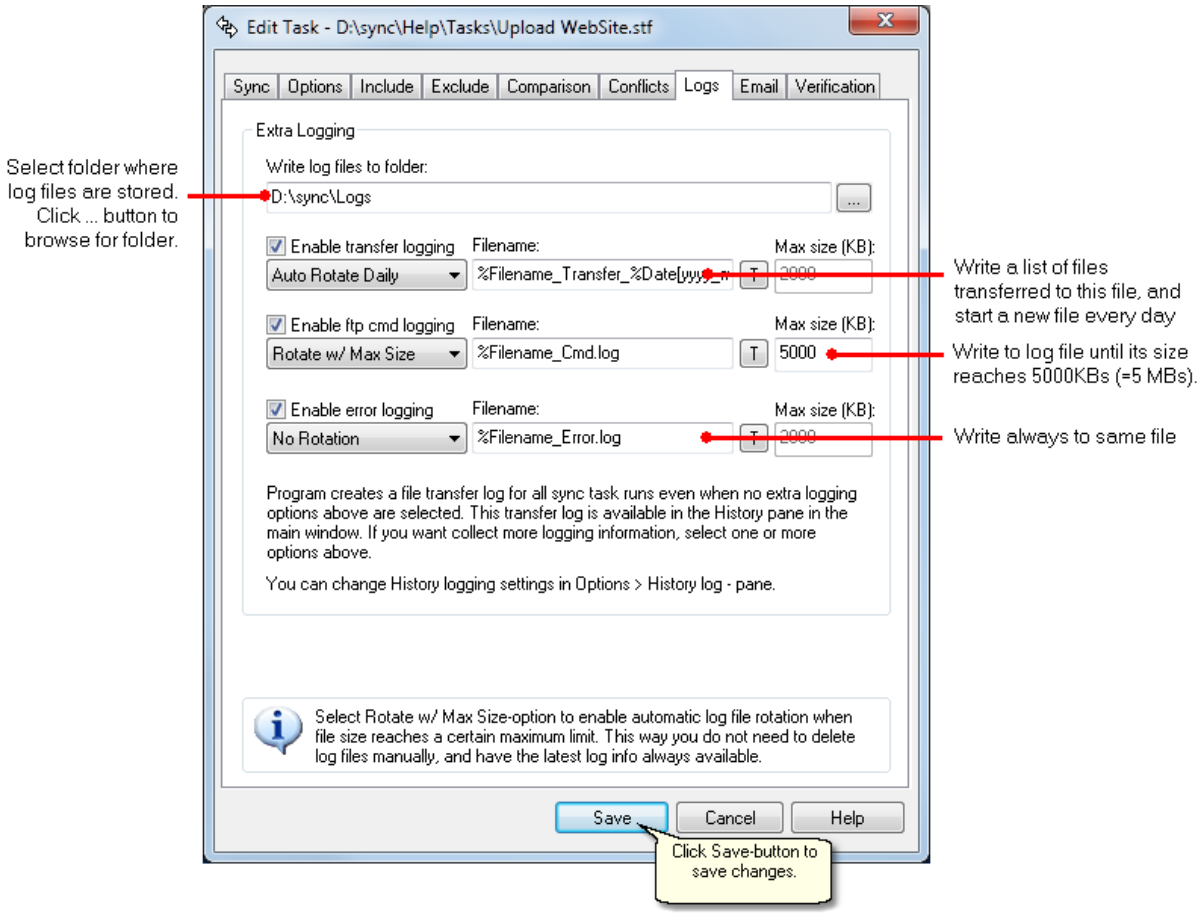
Click the Logs-tab to see logging options:


Edit Task - D:\sync\Help\Tasks\Upload WebSite.stf
Sync
Options
Include
Exclude
Comparison
Conflicts
Logs
Email
Verification
Extra Logging
Write log files to folder:
D:\sync\Logs
Select folder where log files are stored. Click ... button to browse for folder.
Enable transfer logging
Filename:
Max size (KB):
Auto Rotate Daily
%Filename_Transfer_%Date[yyyy_m
Write a list of files transferred to this file, and start a new file every day
Enable ftp cmd logging
Rotate w/ Max Size
%Filename_Cmd.log
5000
Write to log file until its size reaches 5000KBs (=5 MBs).
Enable error logging
No Rotation
%Filename_Error.log
Write always to same file
Program creates a file transfer log for all sync task runs even when no extra logging options above are selected. This transfer log is available in the History pane in the main window. If you want collect more logging information, select one or more options above.
You can change History logging settings in Options > History log - pane.
Select Rotate w/ Max Size-option to enable automatic log file rotation when file size reaches a certain maximum limit. This way you do not need to delete log files manually, and have the latest log info always available.
Save
Cancel
Help
Click Save-button to save changes.

There are three different log types that can be generated:

- **Transfer Log** - List of files transferred for each run
- **FTP Cmd Log** - List of client commands to FTP server, and the server's responses to them. Normally needed for troubleshooting.
- **Error Log** - List of all files that were not transferred. Also includes warnings about files that were retried (=not transferred properly in first try, but finally transferred successfully after one or more retries).

You can see that filenames include % signs. These are for macros that are used in the log filenames. The macros are evaluated at run time, and are used to add information such as date stamps to filenames. You can click the T-button to see what a log filename will look like after all the macros are evaluated (more about macros and log files here).

Now we are finally ready, click the Save-button to save changes made to the task.

Next Step

Previewing again to check the results

Related

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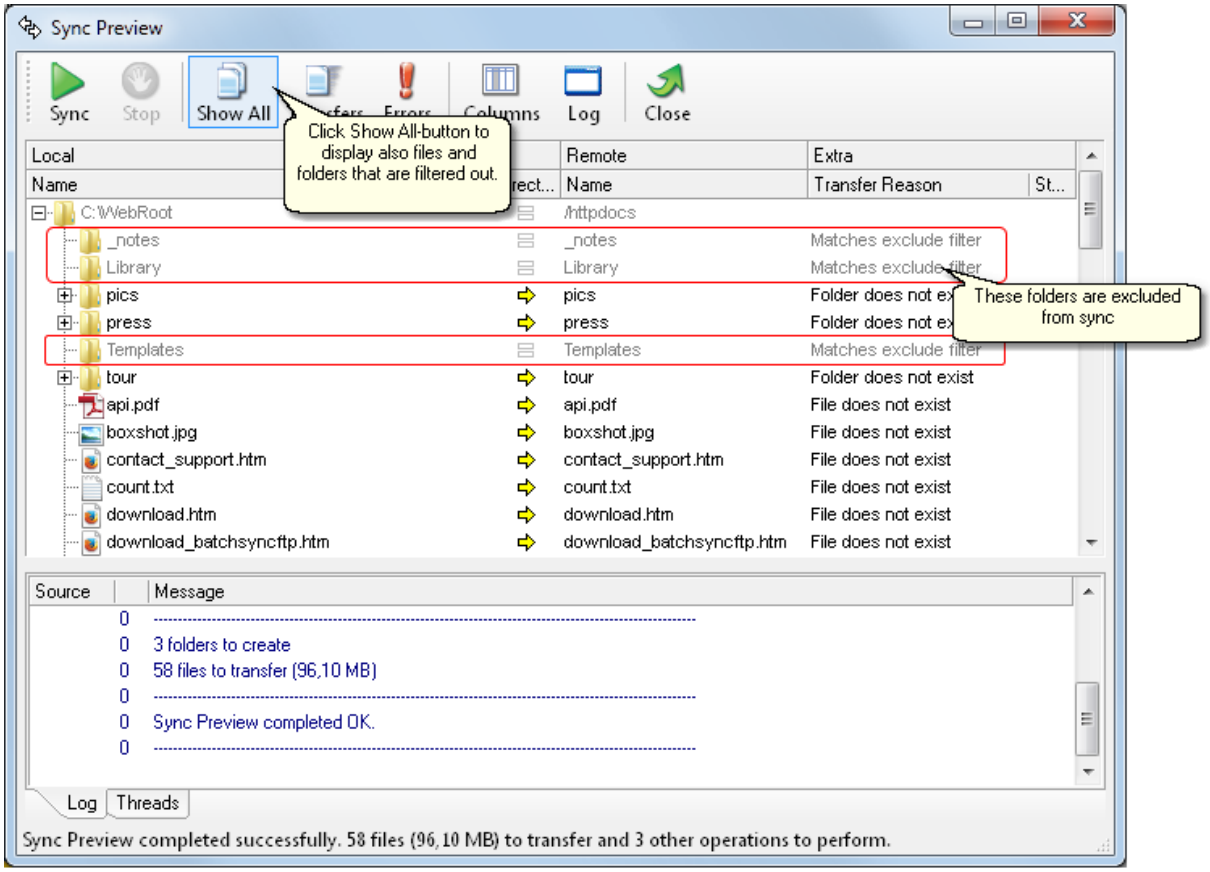
- Include folders filter sample
- Exclude files and folders filter sample

4.3.7 Previewing again to check the results

Run Preview again, but this time with the exclude filters in use. You will see the files in the tree view that will be transferred, and notice that **you will NOT see the _notes, Library, and Templates folders**!

To see that they were actually filtered out as expected, select the **Show All**-button. This option displays all the files in the tree view, even the ones that are filtered out, with the reason why they were excluded. See below:



Since those folders are now filtered out, all of their files and subfolders are also excluded from the sync.

Now that we are happy with the results, close the window by clicking the Close-button.

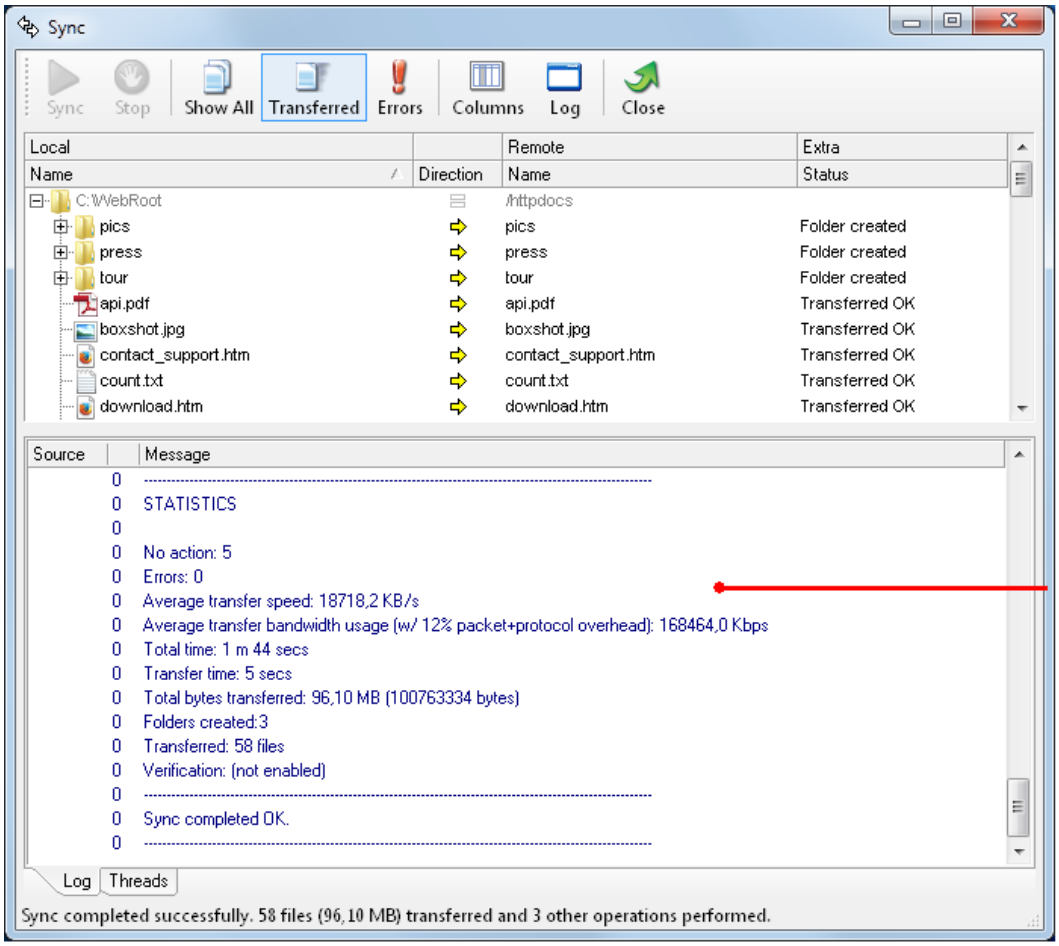
Next Step

Running the task in the Task Editor

4.3.8 Running the task in the Task Editor

Sync Preview proved to us that the task is now doing what we want it to do, so it's time to perform the real sync. Select the task in the main window and click the Sync-button.

Sync uploads all the files to the web site and the final screen looks like this:



Next Step

Viewing log files

4.3.9 Viewing history log

When sync tasks are run unattended by the scheduler, it's often necessary afterward to see what files were transferred and to where. It's also important to see if any errors have occurred during the sync runs. This is where automatic history logging comes into play.

BatchSync always generates a sync task run history log with information about all of the tasks that have been run. To see this log file, click the History button on the left hand side of the main window. The history log looks like this:

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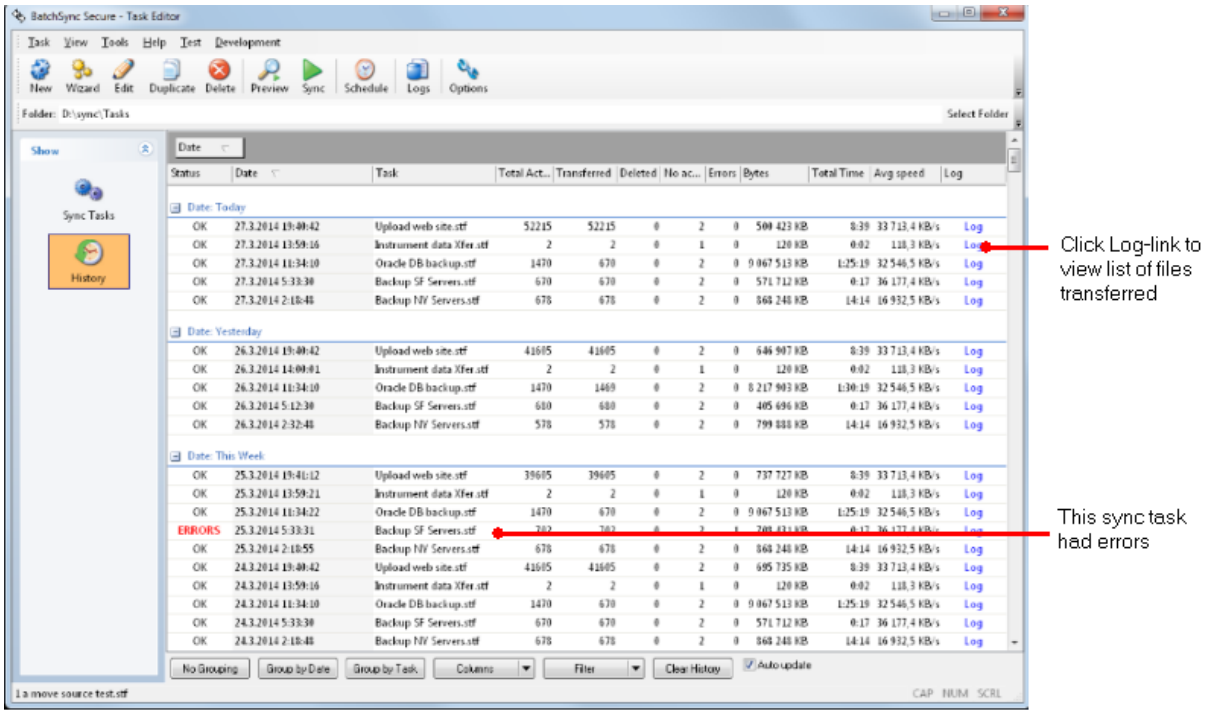

This log includes the status of each task, the number of files transferred, and numerous other statistics. This makes it easy to pinpoint all of the tasks that had errors. You can view the list of files transferred for each sync run by clicking the Log - text link for the selected task.

Next Step

Reference Manual: Scheduling a task

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Part V

Reference Manual

5 Reference Manual

5.1 Sync vs. Copy vs. Move files

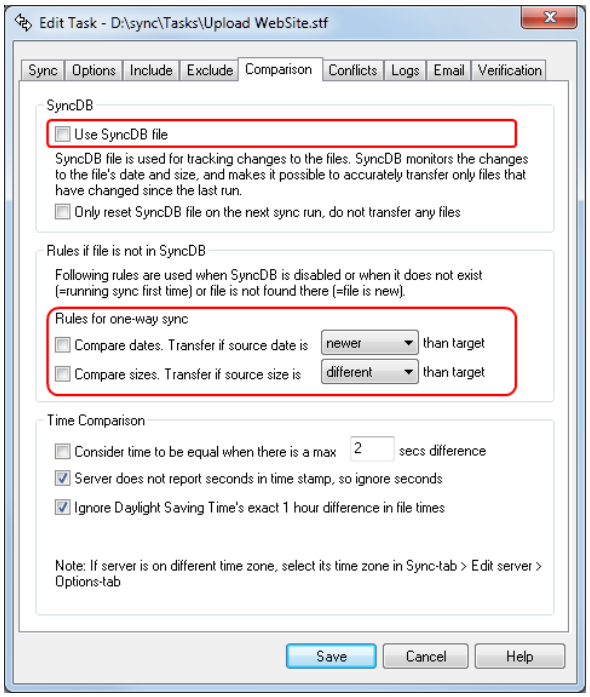
The default file transfer action in BatchSync is a sync. It is same as copy, but transfers only files that have changed since the last sync, minimizing the time and bandwidth required for the file transfer. But sometimes you might want to just copy files, not sync, and BatchSync can do that easily by changing few task options.

Convert a sync task into a copy task

Start by creating a sync task with Task Wizard. After wizard completes. Then

1. Select task you just created, and then Edit Task > Comparison-tab.
2. Uncheck Use SyncDB file check box.
3. Uncheck Compare dates and Compare size check boxes.
4. Save changes and you are done.

The sync task is now a copy task, as there is no date/size comparison when transferring files, but all files are transferred.


Edit Task - D:\sync\Tasks\Upload WebSite.stf
Sync
Options
Include
Exclude
Comparison
Conflicts
Logs
Email
Verification
SyncDB
Use SyncDB file
SyncDB file is used for tracking changes to the files. SyncDB monitors the changes to the file's date and size, and makes it possible to accurately transfer only files that have changed since the last run.
Only reset SyncDB file on the next sync run, do not transfer any files
Rules if file is not in SyncDB
Following rules are used when SyncDB is disabled or when it does not exist (=running sync first time) or file is not found there (=file is new).
Rules for one-way sync
Compare dates. Transfer if source date is
newer
than target
Compare sizes. Transfer if source size is
different
than target
Time Comparison
Consider time to be equal when there is a max
2
secs difference
Server does not report seconds in time stamp, so ignore seconds
Ignore Daylight Saving Time's exact 1 hour difference in file times
Note: If server is on different time zone, select its time zone in Sync-tab > Edit server > Options-tab
Save
Cancel
Help

Convert a copy task into a move task

You can convert a file copy task into a file move task by editing single option in task settings.

1. Select Edit Task > Options-tab.
2. Check One-way sync, delete source files after successful transfer check box

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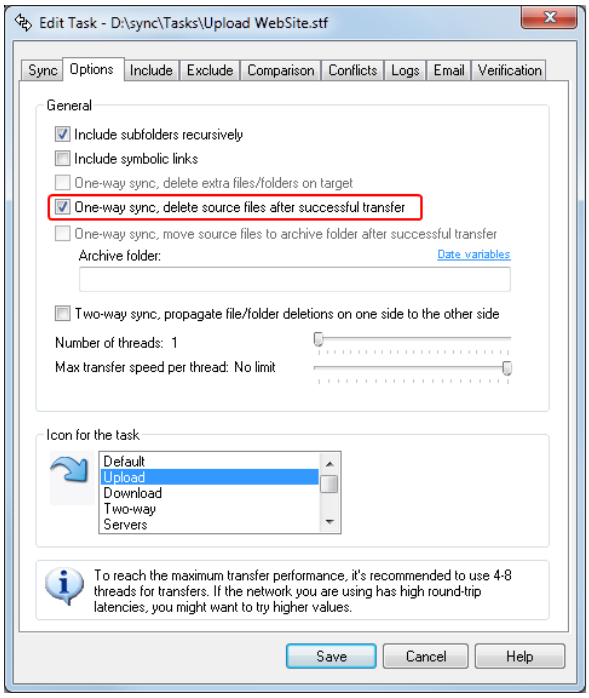
3. Save changes and you are done

Source files are deleted only if transfer is 100% successful. So if file transfer is cut in the middle, and file is not transferred in full, file is not deleted on the source. Each source file is deleted right after successful transfer, so if sync run is interrupted in the middle by any reason, all files that were already deleted, were also already fully transferred.



Archive files after transfer

You can create archive or backup copies of the source files on the source like this:

1. Select Edit Task > Options-tab.
2. Check One-way sync, move source files to archive folder after successful transfer check box.
3. Enter Archive folder where files are moved after transfer. You can and should use date variables in the archive folder name.

Let's say you have a download task like this:

Source: ftp.server.com/OutBox -> **Target:** C:\InBox

And you enter Archive folder: /Archive/%TODAY[yyyy-mm-dd]

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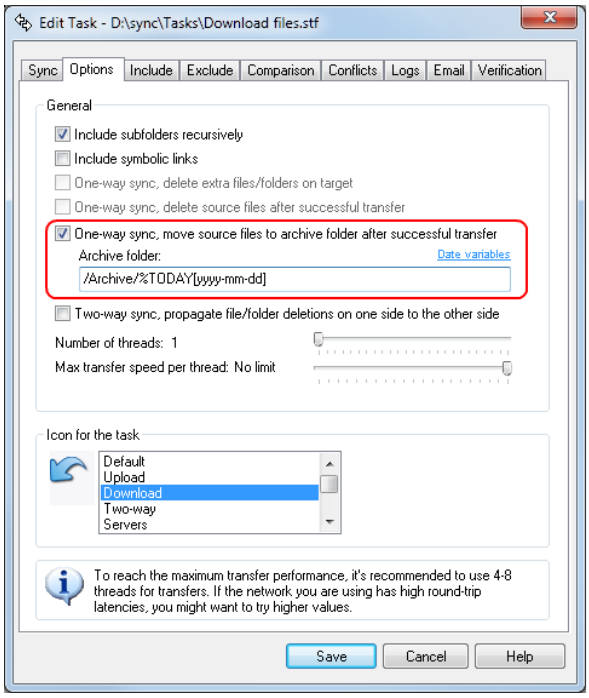

And as an example, the following files are copied to the ftp.server.com/OutBox:

Source ftp.server.com/OutBox	**Target** C:\InBox
/SalesData.zip /Readme.txt /SalesByArea/SalesNY.doc /SalesByArea/SalesCA.doc	

Sync task is run, and here are the results after the sync run:

Source ftp.server.com/OutBox	**Target** C:\InBox
/SalesByArea (empty folder is not deleted)	\SalesData.zip \Readme.txt \SalesByArea\SalesNY.doc \SalesByArea\SalesCA.doc
Source ftp.server.com/Archive/2014-04-15	
/SalesData.zip /Readme.txt /SalesByArea/SalesNY.doc /SalesByArea/SalesCA.doc	

Source files are moved to archive folder only if transfer is 100% successful. So if the file transfer is cut in the middle, and file is not transferred in full, file is not moved, but it says on the original source folder. Each source file is moved right after successful transfer, so if sync run is interrupted in the middle by any reason, all files that were already moved to archive folder, were also already fully transferred.

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5.2 Scheduling a task

Notice! Task scheduling is ONLY available in the BatchSync product. It is not possible to schedule tasks with InstantSync.

BatchSync uses the Windows Task Scheduler to run tasks at regular intervals. The Windows Task Scheduler is installed on all Windows Server 2012, 2008 and 2003, Windows 8.x, 7, Vista, XP, and Windows 2000 platforms. Here are the steps to schedule a sync task with the Windows Task Scheduler.

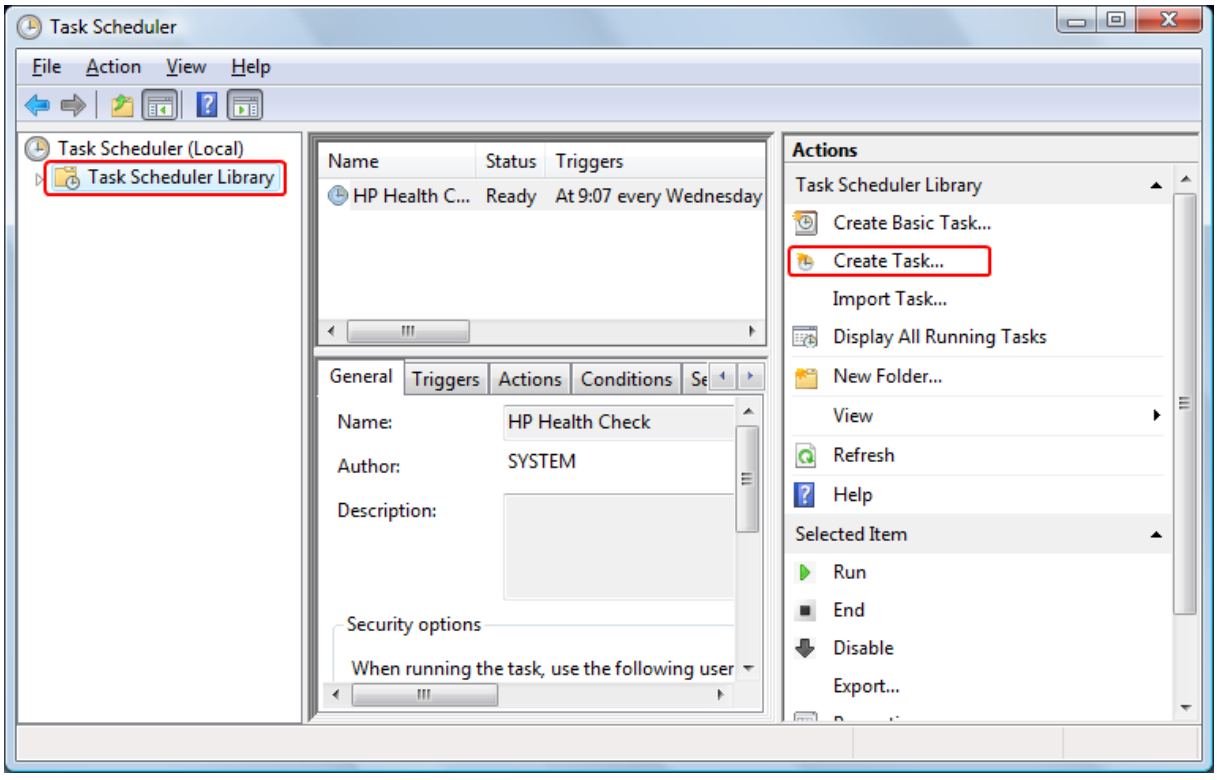
Windows 8.x, 7, Vista and Server 2012 and 2008

Step 1. Start Windows Task Scheduler

Click Start-menu > All Programs > Accessories > System Tools > Task Scheduler. This launches the scheduler program. You can also simply click the Start menu and type `Task Scheduler` into the search field.

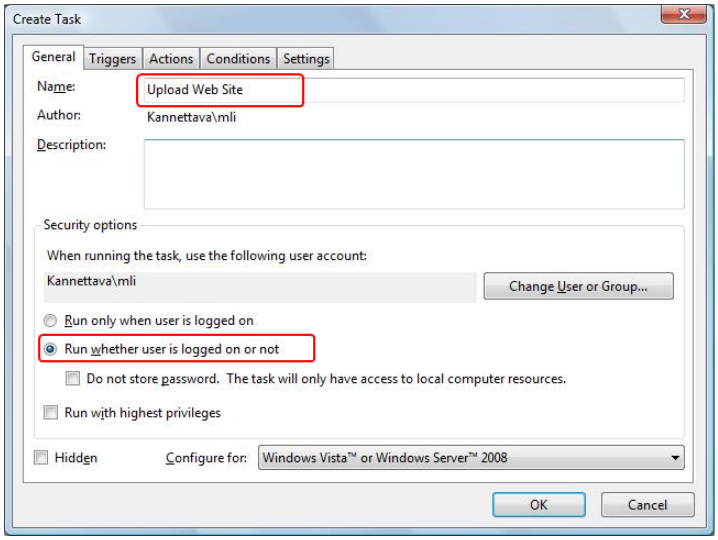
Step 2. Create a new task

Click the Task Scheduler Library on the left, and then Create Task... on the right.



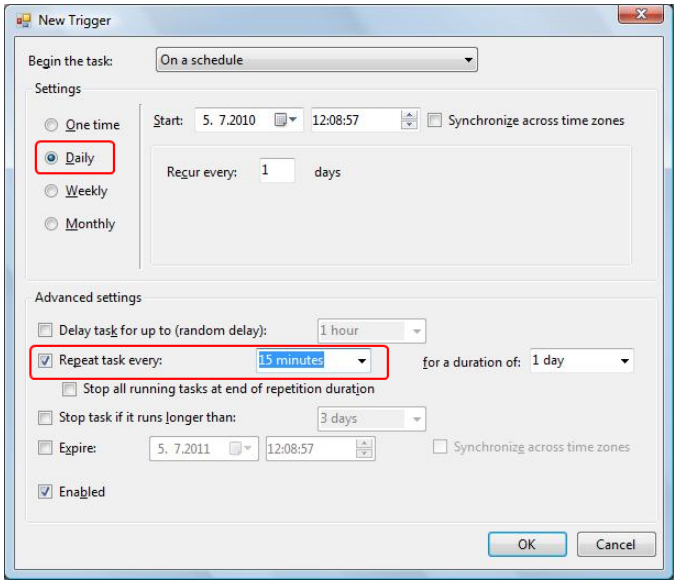
Step 3. Enter task name

Give it a descriptive name. In this example, we use the name "Upload Web Site." Also, select the Run whether user is logged on or not option.



Step 4. Enter schedule

We want to run the "Upload Web Site" task every 15 minutes. To create this schedule, click the Triggers tab, and select the New button. The New Trigger window opens. Select the Daily option, and check the Repeat task every: 15 minutes option.



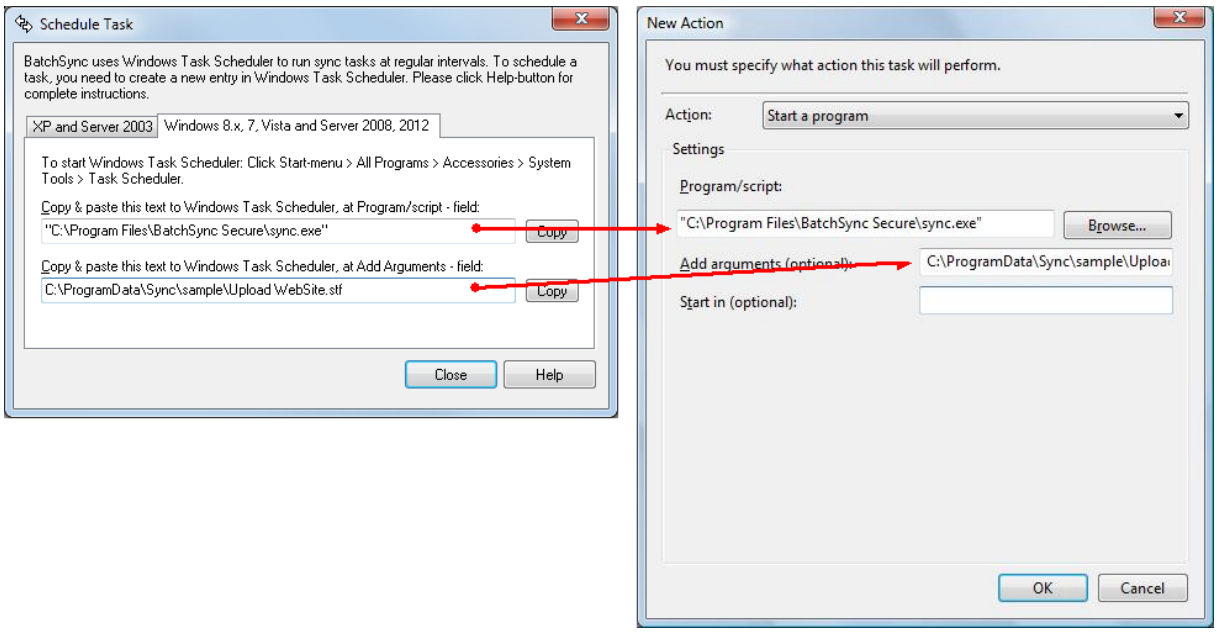
Click OK to save this schedule.

Step 5. Enter program name to run every 15 minutes

We want to execute the SYNC.EXE command line tool with Upload WebSite.Stf as the command line

parameter every 15 minutes. So click the Actions tab, and select the New button. The New Action window opens.

You can copy & paste the New Action window's Program/script and Add Arguments fields from the BatchSync Task Editor. First, select the task in the Task Editor main window and select the Schedule command from the menu. Copy the content of the text fields to the clipboard and paste them to the Windows Task Scheduler, like this:


Schedule Task
BatchSync uses Windows Task Scheduler to run sync tasks at regular intervals. To schedule a task, you need to create a new entry in Windows Task Scheduler. Please click Help-button for complete instructions.
XP and Server 2003
Windows 8.x, 7, Vista and Server 2008, 2012
To start Windows Task Scheduler: Click Start-menu > All Programs > Accessories > System Tools > Task Scheduler.
Copy & paste this text to Windows Task Scheduler, at Program/script - field:
"C:\Program Files\BatchSync Secure\sync.exe"
Copy
Copy & paste this text to Windows Task Scheduler, at Add Arguments - field:
C:\ProgramData\Sync\sample\Upload WebSite.stf
Copy
Close
Help
New Action
You must specify what action this task will perform.
Action:
Start a program
Settings
Program/script:
"C:\Program Files\BatchSync Secure\sync.exe"
Browse...
Add arguments (optional):
C:\ProgramData\Sync\sample\Uploa
Start in (optional):
OK
Cancel

Click OK to save the changes.

Step 6. Save changes

Click the OK button to save your changes to the schedule entry. Windows will now prompt you to enter account information for running this task.

Now BatchSync is run every 15 minutes, with the Upload WebSite.stf as a parameter. You can modify the Upload WebSite.stf task options in the BatchSync Task Editor, while its entry in the Windows Task Scheduler will remain set until you delete the task from the Windows Task Scheduler.

You can monitor the scheduled sync task execution in the BatchSync Task Editor > History pane. This pane is automatically updated every time a scheduled sync run completes.

Windows Task Scheduler has its own logging function, so if you have problems with it, select the task and click the History tab in the Windows Task Scheduler's main window.

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Windows XP and Server 2003

Step 1. Start Windows Task Scheduler

Open Control Panel and double-click the **Scheduled Tasks** - icon to open the scheduler window.

Step 2. Add new task

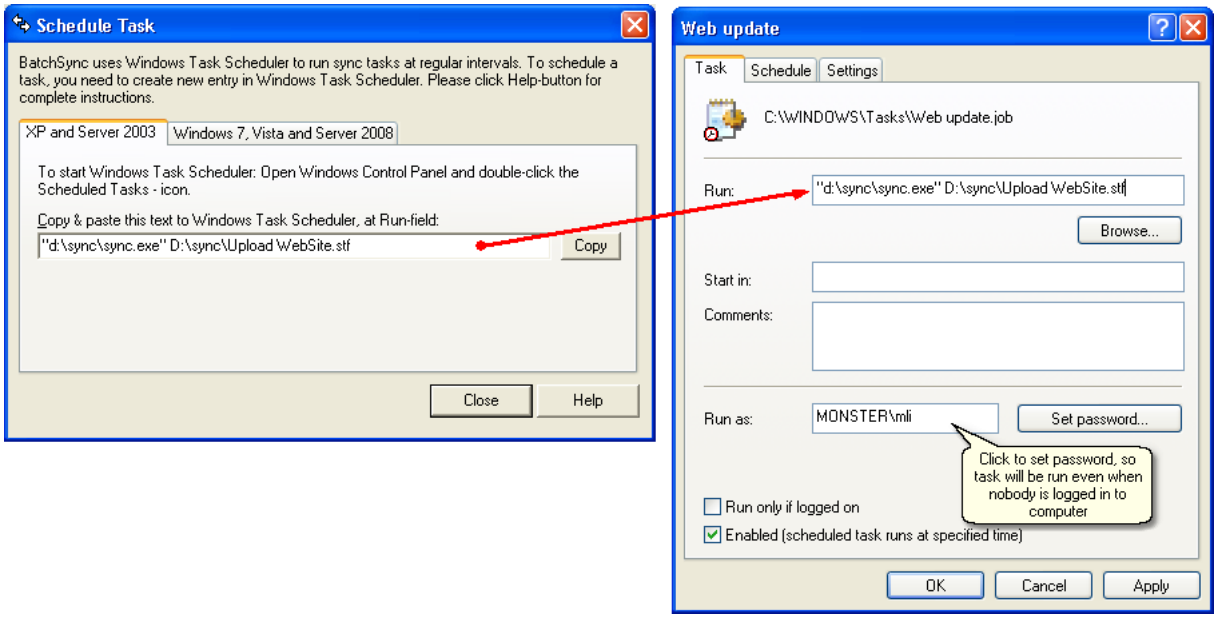
Select menu File > New > Scheduled Task. A new task entry will appear as an icon. Give it a descriptive name. In this example we use the name "Web update"

Step 3. Open properties window for new entry

Right click on the new entry, and select Properties from the popup menu.

Step 4. Enter properties

You can copy & paste the command line of the new entry from the BatchSync Task Editor. First select the task in the Task Editor main window and select the Schedule... command from the menu. Copy the content of the text field to the clipboard and paste it to the Windows Task Scheduler properties window, in the Run-field, like this:


Schedule Task
BatchSync uses Windows Task Scheduler to run sync tasks at regular intervals. To schedule a task, you need to create new entry in Windows Task Scheduler. Please click Help-button for complete instructions.
XP and Server 2003
Windows 7, Vista and Server 2008
To start Windows Task Scheduler: Open Windows Control Panel and double-click the Scheduled Tasks - icon.
Copy & paste this text to Windows Task Scheduler, at Run-field:
"d:\sync\sync.exe" D:\sync\Upload WebSite.stf
Copy
Close
Help
Web update
Task
Schedule
Settings
C:\WINDOWS\Tasks\Web update.job
Run:
"d:\sync\sync.exe" D:\sync\Upload WebSite.stf
Browse...
Start in:
Comments:
Run as:
MONSTER\mli
Set password...
Click to set password, so task will be run even when nobody is logged in to computer
Run only if logged on
Enabled (scheduled task runs at specified time)
OK
Cancel
Apply

Step 5. Set schedule

We want to run the "Web update" task every 15 minutes. To create this schedule, click the Schedule-tab and click the Advanced-button to set up the interval:

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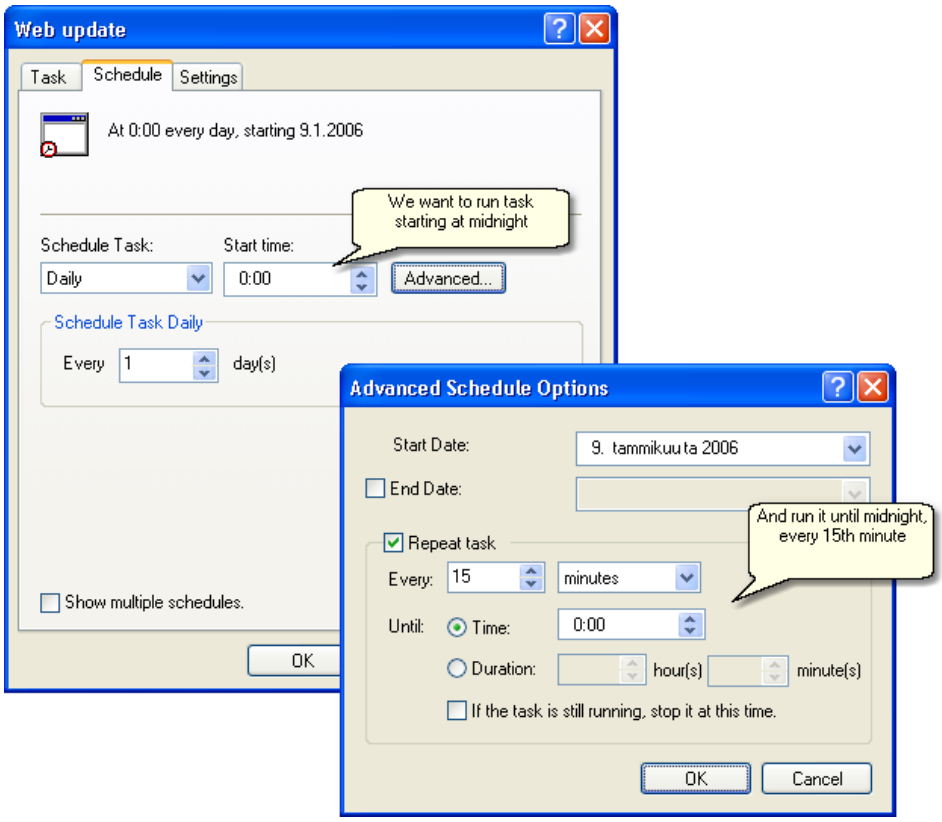

Step 6. Save changes

Click the OK-button to save your changes to the schedule entry. Now BatchSync is run every 15 minutes, with the Upload WebSite.stf task as a parameter. You can modify the Upload WebSite.stf task options in the BatchSync Task Editor, while its entry in Windows Task Scheduler will remain set until you delete the task from Windows Task Scheduler.

Windows Task Scheduler has its own logging function, so if you have problems with it, select the menu Advanced > View Log-command in the Windows Task Scheduler main window.

NOTE! Locate the [***** Most recent entry is above this line *****] line in the Windows task scheduler log file to find the latest entry in the log. This is not necessarily at the end of the file, unlike in BatchSync logs, where the most recent entry is always at the end of the file.

End of Tutorial

This is the end of the tutorial. Start playing with the software by creating you own tasks. And remember, you can safely run Sync Preview for any task you choose, as no files are ever transferred, and no folders are created with preview.

Recommended reading

We recommend that you read the help page about tracking features of SyncDB. This will give you insight into what's going on behind the scenes in BatchSync.

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Related

- Batch files and scheduling
- Sync.exe command line parameters

5.3 Command line, batch files and scheduling

See the page Scheduling a task for step-by-step instructions on how to schedule a sync task using Windows Task Scheduler.

Running a sync from the command line

BatchSync includes multithreaded command line software (Sync.exe) that is used to run sync tasks in the unattended mode. Sync.exe does not have any user interface, but it updates history log, and creates extra log files that you can use to track the files it transfers, and it can optionally send reports and error logs via email. To run a sync task from the command line, change to the BatchSync install folder and enter:

```
Sync C:\Tasks\UploadWebSite.STF
```

This command loads the UploadWebSite.STF task file and performs the sync process using the parameters and options defined in the task file. It then terminates.

You can override many sync task settings by passing them as command line parameters, like this

```
Sync C:\Tasks\UploadWebSite.STF /S:"C:\Upload" /T:"/var/upload" /N:8
/B:"c:\temp\set1.sdb"
```

You can learn more about command line parameters here.

Batch Files

Sometimes it's most convenient to run a sync task by double-clicking an icon on the desktop. This can be done with a one-line batch file that runs sync.exe with a sync task filename as a parameter. You need to supply the full path to both the executable and sync task files, and add quotes around the executable filename if the path to it contains any spaces, like this:

```
"c:\Program Files\BatchSync\Sync" C:\Tasks\Sync CA office.STF
```

Create a SYNC.BAT file with Notepad, add the line shown above, and save it to the desktop. Now running this sync task is a matter of double-clicking the icon on the desktop.

Notice! The most common source of errors when running a sync task from the command line is forgetting to add quotation marks around an executable path name. This is required if the path name contains any spaces.

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Running a sequence of sync tasks in succession

When you need to run a sequence of task files in succession, place multiple commands one after another in a batch file, like this:

```
"c:\Program Files\BatchSync\Sync" C:\Tasks\Sync CA office.STF
"c:\Program Files\BatchSync\Sync" C:\Tasks\Sync IL office.STF
"c:\Program Files\BatchSync\Sync" C:\Tasks\Sync NY office.STF
```

Errorlevel

Sync.exe sets the ERRORLEVEL when it exits to signal whether there were any errors during the sync. Errorlevel=0 means that the sync was successful and errorlevel=1 means that there were one or more errors. You can use this in batch files by conditionally running sync tasks in sequence. The following .bat file runs two sync tasks, but it runs the second task only if the first is successful. The code looks like this:

```
cd "c:\Program Files\BatchSync"
Sync d:\Tasks\Backup Dev Source.stf
IF ERRORLEVEL 1 GOTO Sync1_Errors
IF ERRORLEVEL 0 GOTO Sync1_OK
GOTO Exit

:Sync1_OK
ECHO First sync OK, running second sync
Sync d:\Tasks\Upload2SSH.stf

IF ERRORLEVEL 1 GOTO Sync2_Errors
IF ERRORLEVEL 0 GOTO Sync2_OK

:Sync1_Errors
ECHO Sync1 errors, exiting batch file
GOTO Exit

:Sync2_Errors
ECHO Sync2 errors
GOTO Exit

:Sync2_OK
ECHO Second sync OK

:Exit
```

Notice! The IF ERRORLEVEL testing in batch files must be done in the order shown above (testing for larger numbers first), because the IF ERRORLEVEL 0 test also evaluates as true for error level 1. In the other words, the IF ERRORLEVEL 0 test is really IF ERRORLEVEL>=0, not IF ERRORLEVEL=0 as one might think.

Monitoring tasks

You can monitor sync task execution in the History pane of the main window. This history is updated after a sync task completes, with information like the status code and statistics for the sync run.

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Scheduling a Batch File

When you need to run a sequence of tasks on a schedule, first create a batch (.bat) file as shown above, and then schedule the execution of this batch file with Windows task scheduler, as shown on the Scheduling a task page.

Related

- Scheduling a task
- Sync.exe command line parameters

5.4 Sync.exe command line parameters

Syntax

Here is a list of all available command line parameters. You can also see this list by running SYNC.EXE without any parameters. Output looks like this:

```
--------------------------------------------------------------------------------
BatchSync Secure FTPS/SFTP

Run sync task to synchronize files and folders.

SYNC C:\Path\SyncTask.Stf [/D:Direction] [/P:Protocol] [/H:Host:Port]
 [/U:Username] [/W:Password] [/S:"SourceFolder"] [/T:"TargetFolder"]
 [/R:Recursive] [/L:Symlinks] [/X:Deletion] [/N:NumThreads]
 [/B:"C:\Path\SyncDB.sdb"] [/G:"C:\Logs"]

C:\Path\SyncTask.Stf   Required. Specify task filename with full path. All task
                      settings are read in from this file. Other params passed
                      on the command line override this task settings. If no
                      override params are passed on command line, then this
                       sync task is run as-is.
/D:Direction          Sync direction, like /D:TwoWay. Direction is:
   OneWayUpload       One-way sync, upload files
   OneWayDownload     One-way sync, download files
   TwoWay             Two-way bidirectional sync
/P:Protocol           Protocol used for transfers, like /P:SFTP
   FTP                Standard FTP
   SFTP               SFTP over SSH2
   FTPSimplicit       Secure FTP/SSL implicit (usually using port 990)
   FTPSexplicit_nodata Secure FTP/SSL explicit (no data channel encryption)
   FTPSexplicit       Secure FTP/SSL explicit (both cmd and data encrypted)
/H:Host:Port          Server address and port, like /H:ftp.server.com:21
/U:Username           Login username, like /U:jack
/W:Password           Login password, like /W:secret
/S:"SourceFolder"     Source folder, quotes are required, like /S:"c:\path"
/T:"TargetFolder"     Target folder, quotes are required, like /S:"/upload"
/R:Recursive          Recurse subfolders, like /R:Recursive
   Recursive          Include subfolders (same as /R:1)
   NotRecursive       Do not include subfolders (same as /R:0)
/L:Symlinks           Resolves symbolic links and processes them, like /L:Yes
   Yes                Process symbolic links (same as /L:1)
```

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```
   No                Skip symbolic links (same as /L:0)
/X:Deletion          Deletion options, like /X:DelExtra
   DelExtra          Delete extra files on the target (same as /X:1)
   DelAfterTransfer  Delete source files after successful transfer
   DelPropagate      Two-way sync: Propagate deletions
   None              Turn all deletions off (same as /X:0)
/N:NumThreads        Number of threads (1...25), like /N:4
/B:"C:\Path\SyncDB.sdb" SyncDB file w/ full path. NOTE! Do NOT use same SyncDB
                     file for two sync folder pairs. I.e. always pass unique
                     filename. You can turn SyncDB off with /B:0 (or turn it
                     off in the sync task settings in Task Editor)
/G:"C:\Logs"         Path for extra logging files, quotes are required
/V                   Verbose mode (outputs file actions)
/V2                  Verbose more (as above, plus FTP cmds/responses)

EXAMPLES

SYNC c:\sync\MySyncTask.Stf
SYNC c:\sync\Defaults.Stf /D:OneWayDownload /H:ftp.me.com:21 /U:root /W:secret
    /S:"/pub/apache" /T:"c:\apache" /X:DelExtra /N:8 /B:"c:\sync\sync1.sdb"
SYNC c:\sync\Backup.Stf /S:"/webserver" /T:"c:\backup" /B:"c:\sync\sync2.sdb"

Like in the last example, you can override only certain parameters on the
command line, and rest of the parameters are read from the sync task file.
-------------------------------------------------------------------------------
```

Basic syntax

In the simplest form you can execute a sync task by passing a sync task filename as command line parameter like this:

```
Sync C:\Tasks\DownloadFiles.stf
```

NOTE! To run Sync.exe without path, first change to folder where it is installed (default folder is \BatchSync\ or \BatchSync Secure\ folder under Program Files).

This command runs the sync, and output on the console looks something like this:

```
D:\Program Files\BatchSync>sync C:\Tasks\DownloadFiles.stf

Sync task : C:\Tasks\DownloadFiles.stf
Direction : OneWayDownload
Source    : /pub/logs
Target    : d:\backup\logs
Recursive : Yes
Symlinks  : No

Sync task loaded. Running...

-------------------------------------------------------------------------------
STATISTICS

No action: 25
Errors: 0
```

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```
Average transfer speed: 5 899.2 KB/s
Average transfer bandwidth usage (w/ 12% packet+protocol overhead): 53093.1 Kbps

Total time: 39 secs
Transfer time: 38 secs
Total bytes transferred: 220.71 MB (231435723 bytes)
Transferred: 3 files
--------------------------------------------------------------------------------
Sync completed OK.
--------------------------------------------------------------------------------

Sync OK (Exit code=0)
D:\sync>_
```

Overriding sync task settings with command line parameters

Sync.exe initially loads the sync task settings from the task filename that is passed on the command line. You can override these settings by passing optional command line parameters (see the list of the available parameters above). This is handy if you need to synchronize multiple folder pairs, and sync task settings would only differ slightly. So instead of creating a separate sync task for each folder pair in Task Editor, you pass overriding parameters on the command line.

Example 1

For example, you need to sync web site content to 10 web servers. Each server contains identical folder structure, so you need to upload same source folder to 10 separate hosts, and target folder (and other sync settings) remain the same for all servers.

1) First create a UploadWeb.Stf sync task in Task Editor. Set up this task with:

- Source Folder: C:\Website
- Target Host: www1.company.com
- Target Folder: /www/html

2) Test sync task in Task Editor. After everything works OK, create UploadWebSites.bat file like this:

```
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www1.company.com /B:"c:\ProgramData\Sync\www1.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www2.company.com /B:"c:\ProgramData\Sync\www2.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www3.company.com /B:"c:\ProgramData\Sync\www3.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www4.company.com /B:"c:\ProgramData\Sync\www4.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www5.company.com /B:"c:\ProgramData\Sync\www5.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www6.company.com /B:"c:\ProgramData\Sync\www6.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www7.company.com /B:"c:\ProgramData\Sync\www7.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www8.company.com /B:"c:\ProgramData\Sync\www8.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
```

```
/H:www9.company.com /B:"c:\ProgramData\Sync\www9.sdb"
"C:\Program Files\BatchSync\Sync" C:\ProgramData\Sync\UploadWeb.Stf
/H:www10.company.com /B:"c:\ProgramData\Sync\www10.sdb"
```

Here we pass two overriding command line parameters:

```
/H:www8.company.com                    This /H parameter overrides host address of
the server.
/B:"c:\ProgramData\Sync\www10.sdb"     This /B parameter overrides the SyncDB
filename. Quotes are required!
```

The /B parameter is required for all command line calls **if any of the sync task settings are overridden by command line parameters**. This parameter tells where SyncDB tracking file info is written to, and where it is loaded from.

Now you can sync all 10 servers by running UploadWebSites.bat or by scheduling the executions of this .bat file in Windows Task Scheduler. If you later need to modify any task settings, you only need to make a single change to UploadWeb.Stf file, and same change is used for all servers.

Example 2

You need to download multiple folders from the server. And then upload some folders to the same server.

1) First create a Transfer.Stf sync task in Task Editor. Set up this one-way download sync task with:

- Source Host: server.company.com
- Source Folder: /var/temp
- Target Folder: C:\temp

2) Test sync task in Task Editor. After everything works OK, create Transfer.bat file like this:

```
CD "C:\Program Files\BatchSync"
Sync C:\ProgramData\Sync\Transfer.Stf /S:"/var/database" /T:"c:\backup\db"
/B:"c:\SyncDB\Set1.sdb"
Sync C:\ProgramData\Sync\Transfer.Stf /S:"/var/www/logs" /T:"c:\backup\logs"
/B:"c:\SyncDB\Set2.sdb"
Sync C:\ProgramData\Sync\Transfer.Stf /S:"/etc/init.d"
/T:"c:\backup\conf\%TODAY[yymmdd]" /B:"c:\SyncDB\Set3.sdb"
Sync C:\ProgramData\Sync\Transfer.Stf /D:OneWayUpload /S:"c:\website" /T:"/htdocs"
/B:"c:\SyncDB\Set4.sdb"
Sync C:\ProgramData\Sync\Transfer.Stf /D:OneWayUpload /S:"\\sys1\projects"
/T:"/htdocs/prj" /B:"c:\SyncDB\Set5.sdb"
```

Here we pass following overriding command line parameters:

```
/S:"/var/database"                     /S parameter overrides source folder.
/T:"c:\backup\db"                      /T parameter overrides target folder.
/D:OneWayUpload                        /D parameter overrides sync task direction.
/B:"c:\SyncDB\Set1.sdb"                /B parameter overrides SyncDB filename.
```

Note again: Remember to pass unique SyncDB filename with /B switch to all Sync.exe calls that override any sync task settings!

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Command line parameter /D - Direction

This parameter overrides Edit Task > Sync-tab > Sync Direction option button.

/D:OneWayUpload	Upload local folder to remote server folder
/D:OneWayDownload	Download remote server folder to local folder
/D:TwoWayUpload	Perform two-way bidirectional sync

Command line parameter /P - Protocol

This parameter overrides Edit Task > Sync-tab > Edit Server > Protocol combo box value.

/P:FTP	FTP
/P:FTPSexplicit	FTPS with SSL (Explicit with data)
/P:FTPSexplicit_nodata	FTPS with SSL (Explicit without data)
/P:FTPSimplicit	FTPS with SSL (Implicit)
/P:SFTP	SFTP using SSH2

Command line parameter /H - Host address:Port

This parameter overrides Edit Task > Sync-tab > Edit Server > Host address and Port - field values.

/H:www.server.com:21	Specify host address and port values. The port value is optional.

Command line parameter /U - Username

This parameter overrides Edit Task > Sync-tab > Edit Server > Username - field value.

/U:admin	Specify username

Command line parameter /W - PassWord

This parameter overrides Edit Task > Sync-tab > Edit Server > Password - field value.

/W:secret	Specify password

Command line parameter /S - Source folder name

This parameter overrides Edit Task > Sync-tab > Source folder field value. Quotes around the folder name are required.

/S:"c:\backup"	Local source folder name. Use quotes.
/S:"/www/logs"	Remote source folder name.

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NOTE! You can use date variables in this parameter.

Command line parameter /T - Target folder name

This parameter overrides Edit Task > Sync-tab > Target folder field value. Quotes around the folder name are required.

/T:"/htdocs"	Remote target folder name. Use quotes.
/T:"C:\Backup\%TODAY[mm-dd-yyyy]"	Local target folder name. You can use date variables here.

Command line parameter /R - Recursive

This parameter overrides Edit Task > Options-tab > Include subfolders recursively check box value.

/R:Recursive	Recurse subfolders
/R:1	Recurse subfolders (alternative syntax)
/R:NotRecursive	Do not recurse subfolders
/R:0	Do not recurse subfolders (alternative syntax)

Command line parameter /L - SymLinks

This parameter overrides Edit Task > Options-tab > Include symbolic links check box value.

/L:Yes	Process symbolic links
/L:1	Process symbolic links (alternative syntax)
/L:No	Skip symbolic links
/L:0	Skip symbolic links (alternative syntax)

Command line parameter /X - Deletion options

This parameter overrides Edit Task > Options-tab > deletion options.

/X:None	Turn all deletion options off.
/X:0	Turn all deletion options off (alternative syntax).
/X:DelExtra	Edit Task > Options-tab > One-way sync, delete extra files/folders on target
/L:DelAfterTransfer	Edit Task > Options-tab > One-way sync, delete source files after successful transfer, i.e. move files
/L:DelPropagate	Edit Task > Options-tab > Two-way sync, propagate file/folder deletions on one side to the other side

Command line parameter /N - Number of threads

This parameter overrides Edit Task > Options-tab > Number of threads setting.

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/N:12 Use 12 simultaneous threads.

Command line parameter /B - SyncDB filename

This parameter overrides default SyncDB filename. By default SyncDB filename is same as sync task filename, with extension .STF replaced with .SDB.

It is very important that you pass unique filename for each folder pair you sync. The SyncDB file stores file change tracking data, and if same filename is used for multiple folder pairs, file change tracking no longer works properly.

You need to use quotes around filename, and make sure that folder name you specify here already exists.

/B:"c:\ProgramData\Sync\set1.sdb" Save SyncDB file with this unique filename.

Command line parameter /V - Verbose mode

When you pass the /V command line parameter, the output on the console looks like this:

```
D:\sync>sync /V DownloadFiles.stf
BatchSync Secure FTPS/SFTP 3.0.0

Verbose mode.
Task name: DownloadFiles.stf

D:\sync\DownloadFiles.stf loaded. Running...
Connecting to localhost (21)
Get directory listing: /LogFiles
Download file /LogFiles/database.dat
Download file /LogFiles/database.db
Download file /LogFiles/dbsysadmin.dat

------------------------------------------------------------------------------
STATISTICS

No action: 25
Errors: 0
Average transfer speed: 6 240.3 KB/s
Average transfer bandwidth usage (w/ 12% packet+protocol overhead): 56162.8 Kbps

Total time: 37 secs
Transfer time: 36 secs
Total bytes transferred: 220.71 MB (231435723 bytes)
Transferred: 3 files
------------------------------------------------------------------------------
Sync completed OK.
------------------------------------------------------------------------------

Sync OK (Exit code=0)
D:\sync>_
```

Command line parameter /V2 - Extended verbose mode

When you pass the /V2 command line parameter, you will see the client -> server communication in more detail. So output on the console looks like this:

```
D:\sync>sync /V2 DownloadFiles.stf

D:\sync\DownloadFiles.stf loaded. Running...
Connecting to localhost (21)
SERVER: 220 FileZilla Server version 0.9.34 beta written by Tim Kosse (Tim.Kosse
@gmx.de) Please visit http://sourceforge.
CLIENT: USER dbadmin
SERVER: 331 Password required for dbadmin

CLIENT: PASS ******
SERVER: 230 Logged on

CLIENT: FEAT
SERVER: 211-Features:
 MDTM
 REST STREAM
 SIZE
 MLST type*;size*;modify*;
 MLSD
 AUTH SSL
 AUTH TLS
 UTF8
 CLNT
 MFMT
211 End

CLIENT: CLNT Sync
SERVER: 200 Don't care

CLIENT: OPTS UTF8 ON
SERVER: 200 UTF8 mode enabled

CLIENT: PWD
SERVER: 257 "/" is current directory.

Get directory listing: /LogFiles

CLIENT: TYPE A
SERVER: 200 Type set to A
:
:
:
CLIENT: CWD /LogFiles
SERVER: 250 CWD successful. "/LogFiles" is current directory.

CLIENT: SIZE k9410enx.exe
SERVER: 213 69711200

CLIENT: PASV
SERVER: 227 Entering Passive Mode (127,0,0,1,13,178)
```

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```
CLIENT: RETR dbsysadmin.dat
SERVER: 150 Connection accepted
SERVER: 226 Transfer OK

--------------------------------------------------------------------------------
STATISTICS

No action: 25
Errors: 0
Average transfer speed: 6 369.2 KB/s
Average transfer bandwidth usage (w/ 12% packet+protocol overhead): 57322.9 Kbps

Total time: 36 secs
Transfer time: 35 secs
Total bytes transferred: 220.71 MB (231435723 bytes)
Transferred: 3 files
--------------------------------------------------------------------------------
Sync completed OK.
--------------------------------------------------------------------------------

Sync OK (Exit code=0)
D:\sync>_
```

Related

- Scheduling a task
- Batch files and scheduling

5.5 Windows Event Log

Windows event logs are special files that record significant events on your computer, such as when a user logs on to the computer or when a program encounters an error. Whenever these types of events occur, Windows records the event in an event log that you can read by using Event Viewer.

BatchSync writes all sync run results to the Windows event log. Events contain following information:

1. Sync OK - Level=Information, Source=BatchSync, EventID=101, Task Category=1
2 Sync Errors - Level=Error, Source=BatchSync, EventID=102, Task Category=1

You can create a task in Windows Task Scheduler, that monitors these events, and execute other programs or actions based on BatchSync sync task results. Or you can utilize various third party log monitoring tools to integrate BatchSync with external systems.

You can view event log with Windows Event Viewer. It looks like this:

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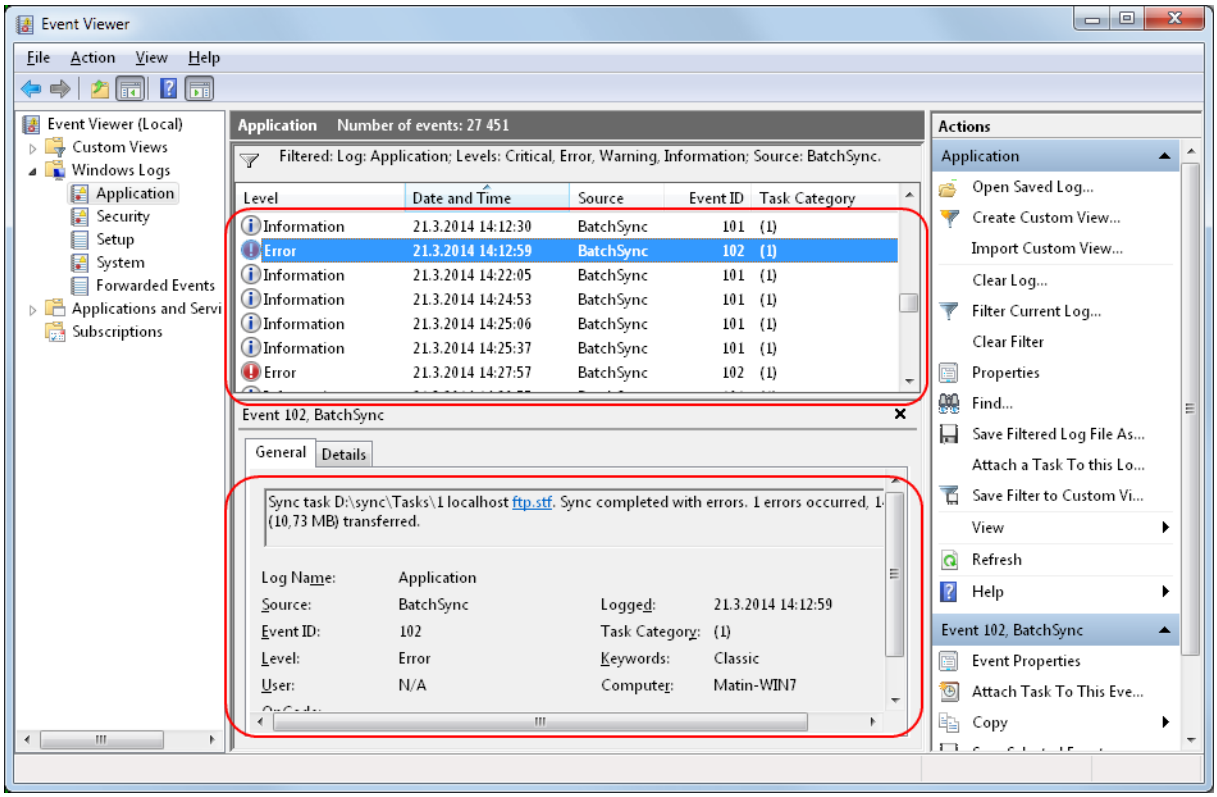

5.6 Server folders

The vast majority of FTP servers out there use UNIX style path names. This is the default syntax BatchSync expects to see in the Server Settings > Server Folder-field. If an entered value does not comply with UNIX syntax, then the Server Folder Warning-window is shown. This window makes a suggestion about how to automatically fix the entered folder value, and most of the time this suggestion is correct and should be used. It should be noted, though, that some servers use a different syntax for their folders. In this case, the correct syntax is different from UNIX syntax, and the BatchSync suggestion might be wrong. In these cases, you should use the current value entered, and ignore the software suggested value.

UNIX-style path names

Some 95% of all FTP servers out there use UNIX-style path names. This means that if you do not know how your server is configured, it is the safest to assume that it is using UNIX syntax for all path names. This syntax denotes that all sub-folders are separated by the forward slash '/' character, like this:

- /pub/html
- /pub/http-docs
- /bin/etc/httpd
- /this/is/long/path/with/multiple/sub/folders

Windows/DOS-style path names

All Windows computers use DOS-style path names for local and network operations. This syntax denotes that all sub-folders are separated by the backslash '\' character, the network shares (UNC paths) start with two backslashes, \\, and local path names start with a drive letter and a ':' character like this:

- \\pub\html
- \\server\pub\http-docs
- c:\bin\etc\httpd
- z:\this\is\long\path\with\multiple\sub\folders

Even though an FTP server might be running on Windows (and the server is, for example, a Microsoft IIS FTP server), it most likely DOES NOT use DOS-syntax for FTP commands. Instead, most IIS servers mimic UNIX servers and use UNIX-style path names for all FTP operations.

You can check the syntax that a specific server uses for folder names by connecting to it with an FTP client. Browse to the server folder you will use in the sync task, and look at how the FTP client displays the current folder name, whether it is the "c:\bin\etc\httpd" or "/bin/etc/httpd" style. You can directly copy & paste this server folder value to the sync task settings.

UNIX Absolute vs. Relative path names

BatchSync supports ONLY absolute path names! So relative paths are not supported. The UNIX-style absolute path names start with a forward slash '/' character, like this:

- /pub/html
- /pub/http-docs
- /
- /bin/etc/httpd

The relative paths do not start with the forward slash character. The relative paths are not supported because actual absolute path might be dependent on user default login home folder and this causes lot of confusion. Samples of relative paths (note the missing / char in the beginning):

- pub/html
- pub/http-docs

If a user's home folder is /home/mike, then these translate to the actual paths:

- /home/mike/pub/html
- /home/mike/pub/http-docs

or if a user's home folder is /usr, then these translate to the actual paths:

- /usr/pub/html
- /usr/pub/http-docs

As the samples above show, the actual path is not the same for different users, so relative path names are not supported. Use absolute path names instead.

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5.7 Date variables in folder names and filters

Date variables can be used in the source and target folders names to create dynamically changing folder names. Usually these are needed when creating a backup sync task, where part of the target folder name is evaluated to current date values. For example:

```
Target Folder: C:\Backup\%TODAY[yyyy-mm-dd]
```

is evaluated at run time to the folder name (if run on 15/6/2014):

```
C:\Backup\2014-06-15
```

In this case, target folder C:\Backup\2014-06-15 is automatically created when the sync task is run. You can use multiple variables in the folder name, like

```
Target Folder: C:\Backup\Year %YEAR\Month %MONTH
```

would evaluate to

```
C:\Backup\Year 2014\Month 06
```

at run time. The [yymmdd] portion of the date variable can be used to format the date in various ways, see the table below for more information.

Available Date Variables

The following table shows a list of date variables that can be used in folder names:

Date Variable	Evaluates to
%YEAR	Evaluates to current year, like 2014
%MONTH	Evaluates to current month, like 06
%DAY	Evaluates to current day, like 31
%TODAY[yymmdd]	Evaluates to current date with formatting
%PREV_BUSDAY[yymmdd]	Evaluates to previous business day with formatting
%BUSDAY[yymmdd]	Evaluates to current business day with formatting
%NEXT_BUSDAY[yymmdd]	Evaluates to next business day with formatting

The %PREV_BUSDAY, %BUSDAY, and %NEXT_BUSDAY variables always evaluate to the business days Mon-Fri. For example, if today was 6/21/2014 (Monday), these variables would be evaluated to:

- %PREV_BUSDAY - 6/18/2014 (the previous business day before Monday is Friday)
- %BUSDAY - 6/21/2014 (the current business day, it's Monday)
- %NEXT_BUSDAY - 6/22/2014 (the next business day after Monday is Tuesday)

and if today was 6/26/2014 (Saturday), these variables would be evaluated to:

- %PREV_BUSDAY - 6/25/2014 (the previous business day before Saturday is Friday)
- %BUSDAY - 6/25/2014 (the current day is not a business day, so this evaluates to the previous

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business day, Friday)
- %NEXT_BUSDAY - 6/28/2014 (the next business day after Saturday is Monday)

Formatting

The variables with formatting are very versatile, and you can use them to create dates and times in a variety of formats. The following table shows how the **yymmdd** portion of the %TODAY[**yymmdd**] string can be used to create custom date strings:

Format	Description
(:)	Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator in formatted output is determined by your system settings.
(/)	Date separator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in formatted output is determined by your system settings.
c	Display the date as ddddd and display the time as ttttt, in that order. Display only date information if there is no fractional part to the date serial number; display only time information if there is no integer portion.
d	Display the day as a number without a leading zero (1 – 31).
dd	Display the day as a number with a leading zero (01 – 31).
ddd	Display the day as an abbreviation (Sun – Sat).
dddd	Display the day as a full name (Sunday – Saturday).
ddddd	Display the date as a complete date (including day, month, and year), formatted according to your system's short date format setting. The default short date format is m/d/yy.
dddddd	Display a date serial number as a complete date (including day, month, and year) formatted according to the long date setting recognized by your system. The default long date format is mmmm dd, yyyy.
w	Display the day of the week as a number (1 for Sunday through 7 for Saturday).
ww	Display the week of the year as a number (1 – 54).
m	Display the month as a number without a leading zero (1 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.
mm	Display the month as a number with a leading zero (01 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.
mmm	Display the month as an abbreviation (Jan – Dec).
mmmm	Display the month as a full month name (January – December).
q	Display the quarter of the year as a number (1 – 4).
y	Display the day of the year as a number (1 – 366).
yy	Display the year as a 2-digit number (00 – 99).
yyyy	Display the year as a 4-digit number (1000 – 9999).

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Samples of date variables in folder names. Sync is run on 6/15/2014 at 11:45:59

Folder with date variable	Evaluated to folder name
C:\Backup\%TODAY[mm_dd_yy]	C:\Backup\06_15_10
C:\Backup\%TODAY[mmm]\%DAY	C:\Backup\Jan\15
C:\Daily Backups\%TODAY[dddd]	C:\Daily Backups\Tuesday
/upload/Month_%MONTH_Day_%DAY	/upload/Month_06_Day_15
/backup/%TODAY[mm-dd-yyyy]_at_%TODAY[Hh-Nn-Ss]	/backup/06-15-2014_at_11-45-59

Using date variables in filters

You can also use date variables in include and exclude filters. All of the date variables described above are also available in filters. For example, this makes it possible to create the following Include filter:

```
Include Filename Filter: %TODAY[mm_dd_yyyy].*
```

which would include only files containing the current date 06_15_2014.* in the beginning of the filename.

5.8 History and Log Files

History log

The global run history log contains run info and statistics about all of the sync tasks that were run on this computer. You can view this history log by clicking the History button on the left hand side of the main window. This log is shared by all tasks, and it's always enabled, so you cannot disable it. The history log files are written to the folder specified in the global options in the menu Tools > Options > History log folder field. The same tab also has a Max number of history items field, which specifies the maximum number of history entries available in the History pane. The older entries over this max limit are automatically deleted.

Extra Log Folders

In addition to the always enabled History log, you might need extra logging on a per task basis. All of the task specific log files are stored in the folder that is specified in the sync task settings (Edit Task > Log-tab). Sometimes, it's best to write single sync task log files to separate folders. And sometimes it's more convenient to store them all in the same folder. You must decide what best suits your needs.

Log file types

There are three types of log files:

1. **Transfer logs**: Contain a list of files transferred, and errors if they occur during the sync
2. **FTP Cmd logs**: Contain a list of FTP protocol commands and responses between BatchSync and an FTP server. Also contains any errors that might occur.

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3. **Error logs**: List of warnings and errors that occur on the sync run. Warnings are about files that were retried, i.e. there were errors during the transfer, but after one or more retries, the file was transferred successfully. An error means that file was not transferred successfully, even after retries. The number of retries are specified in Edit Task > Edit Server > Options-tab > Timeouts > Retry count max. There you can also specify the time between retries.

Log file rotation schemes

There are seven different rotation schemes to choose from (macros are explained in detail below):

1. **No Rotation**. Always write to the same file. File size increases until disk is full.
2. **Rotate w/ Max Size**. Write to the same file until file size reaches Max Size. Then rename to .bak.log and create new file.
3. **Auto Rotate Daily**. Macros in the filename evaluate to a different filename each day, so a new file is started every day.
4. **Auto Rotate Weekly**. Macros in the filename evaluate to a different filename each week, so a new file is started every week.
5. **Auto Rotate Monthly**. Macros in the filename evaluate to a different filename each month, so a new file is started every month.
6. **Auto Rotate Custom**. Creates a custom filename using macros (see samples below).
7. **New log for each run**. Creates a new log file each time sync task is run.

Log file deletion

BatchSync ONLY deletes log files when Rotate w/ Max Size is selected. In all other cases, log files are never deleted, so they eat up the disk space until the disk is full. Therefore it's recommended that you select the Rotate w/ Max Size option, or make sure that you delete log files manually every now and then.

You can manually delete any of the log files when you feel like they need to be deleted.

Macros in log filenames

Log filenames can contain macros. The macros start with the % sign, and they are evaluated (i.e. converted to values) when sync task is run. BatchSync recognizes the following macros:

%DAY	Evaluates to current day 1...31
%MONTH	Evaluates to current month 1...12
%YEAR	Evaluates to current year 2014...2099
%DATE[Format]	Evaluates to custom date and time format, more below.
%FILENAME	Task filename without .STF extension

The %DATE[Format] macro is very versatile, and you can use it to create dates and times in a variety of formats. The following table shows how the **Format** string can be used to create custom date strings:

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Format	Description
(:)	Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator in formatted output is determined by your system settings.
(/)	Date separator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in formatted output is determined by your system settings.
c	Display the date as ddddd and display the time as ttttt, in that order. Display only date information if there is no fractional part to the date serial number; display only time information if there is no integer portion.
d	Display the day as a number without a leading zero (1 – 31).
dd	Display the day as a number with a leading zero (01 – 31).
ddd	Display the day as an abbreviation (Sun – Sat).
dddd	Display the day as a full name (Sunday – Saturday).
ddddd	Display the date as a complete date (including day, month, and year), formatted according to your system's short date format setting. The default short date format is m/d/yy.
dddddd	Display a date serial number as a complete date (including day, month, and year) formatted according to the long date setting recognized by your system. The default long date format is mmmm dd, yyyy.
w	Display the day of the week as a number (1 for Sunday through 7 for Saturday).
ww	Display the week of the year as a number (1 – 54).
m	Display the month as a number without a leading zero (1 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.
mm	Display the month as a number with a leading zero (01 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.
mmm	Display the month as an abbreviation (Jan – Dec).
mmmm	Display the month as a full month name (January – December).
q	Display the quarter of the year as a number (1 – 4).
y	Display the day of the year as a number (1 – 366).
yy	Display the year as a 2-digit number (00 – 99).
yyyy	Display the year as a 4-digit number (1000 – 9999).

Samples of macros in filenames (task filename is WebUpload.STF, and date sync is run 2/15/2014 at 11:45:59):

Format	Evaluated to filename
%YEAR_%MONTH_%DAY_%FILENAME.log	2014_02_15_WebUpload.log
%DATE[yyyy_mm_dd]_%FILENAME.log	2014_02_15_WebUpload.log
%FILENAME Month %MONTH Date %DAY.logfile	WebUpload Month 02 Date 15.logfile
%DATE[mm-dd-yyyy] %FILENAME at %DATE[Hh-Nn-Ss].txt	2014-02-15 WebUpload at 11-45-59.txt
%DATE[mm/dd/yyyy] %FILENAME at %DATE[Hh:Nn:Ss].txt	ERROR: Filename cannot contain / or : characters

When entering a filename with macros, you can test it by pressing the T button. This button evaluates the macro and shows it in a message box.

5.9 Filters and wildcard characters

General

File and folder name filters are used to either select a subset of files to be included (by default all files are included), or remove a subset of files from the sync file set (by default no files are excluded). When a filename matches the include filter, it is included. Similarly, when a filename matches the exclude filter, it is excluded. If a filename matches both the include and exclude filters, then it's excluded.

Samples of filter use

You can find samples about filtering here:

- Include folders filter sample
- Exclude files and folders filter sample

Pattern matching, wildcard characters

You can use pattern matching to create include and exclude filters that match multiple file or folder names. Built-in pattern matching provides a versatile tool for file and folder name matching. The pattern-matching feature allows you to use wildcard characters, character lists, or character ranges, in any combination, to match file and folder names. The pattern matching syntax resembles the regular expressions used on many systems.

The following table shows the characters allowed in a pattern and what they match:

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Characters in pattern	Matches in file or folder name
?	Any single character.
*	Zero or more characters.
#	Any single digit (0–9).
[charlist]	Any single character in charlist
[!charlist]	Any single character not in charlist.

A group of one or more characters (charlist) enclosed in brackets ([ ]) can be used to match any single character in a file/folder name and can include almost any character code, including digits.

Note: To match the special characters left bracket ([), question mark (?), number sign (#), and asterisk (*), enclose them in brackets. The right bracket (]) can't be used within a group to match itself, but it can be used outside a group as an individual character.

By using a hyphen (–) to separate the upper and lower bounds of the range, charlist can specify a range of characters. For example, [A-Z] results in a match if the corresponding character position in the file/folder name contains any uppercase letters in the range A–Z. Multiple ranges are included within the brackets without delimiters.

The meaning of a specified range depends on the character ordering valid at the system, [A–E] matches A, a, À, à, B, b, E, e. The range does not match Ê or ê because accented characters fall after unaccented characters in the sort order.

Other important rules for pattern matching include the following:

- An exclamation point (!) at the beginning of charlist means that a match is made if any character except the characters in charlist is found in a file/folder name. When used outside brackets, the exclamation point matches itself.
- A hyphen (–) can appear either at the beginning (after an exclamation point if one is used) or at the end of charlist to match itself. In any other location, the hyphen is used to identify a range of characters.
- When a range of characters is specified, they must appear in ascending sort order (from lowest to highest). [A-Z] is a valid pattern, but [Z-A] is not.
- The character sequence [] is considered a zero-length string ("").

In some languages, there are special characters in the alphabet that represent two separate characters. For example, several languages use the character "æ" to represent the characters "a" and "e" when they appear together. The matching recognizes that the single special character and the two individual characters are equivalent. When a language that uses a special character is specified in the system locale settings, an occurrence of the single special character in either pattern or file/folder name matches the equivalent 2-character sequence in the other string. Similarly, a single special character in a pattern enclosed in brackets (by itself, in a list, or in a range) matches the equivalent 2-character sequence in a file/folder name.

Pattern matching samples

In addition to patterns, you can also enter multiple filters by separating them with semicolons (;). Notice, that when entering multiple filters, do not leave ANY extra spaces between filters. So when you want to match for .gif and .jpg files, the correct way to enter the filter is:

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- *.gif;*.jpg

And the incorrect way to enter it is:

- *.gif ; *.jpg

Examples of pattern matching and multiple filters:

Filter	Matches
*.log	All filenames that have the .log extension
*.*htm*	Filenames with extensions like .htm .html .shtml
.jpg;.jpeg;*.gif;*.png	All files with .jpg .jpeg .gif .png extensions
index.*	Files starting with index, like index.htm, index.html, index.txt, index.php
[KM]iss.txt	Kiss.txt and Miss.txt
Picture##.jpg	Picture01.jpg, Picture02.jpg, Picture03.jpg, etc.
2014-01-*.log	2014-01-01.log, 2014-01-02.log, 2014-01-.log, 2014-01-Month.log, etc.
.php;.asp;*.aspx	Forum.php, Calc.asp, SaveToDB.aspx

Similarly you can use wildcard characters in folder name filters.

Entering full, partial, and no paths

File and folder names are most commonly entered without a path. This way they can match file/folder names in all folders. Sometimes it is necessary to limit a filter to certain folders, like in the following case:

Sync task is to from C:\WebRoot -> /pub/public

Case 1: Almost all folders contain the **Thumbs.db** file, which we do not want to include in the sync
Case 2: **C:\WebRoot\Scripts** contains PHP script files that we do not want to include in the sync
Case 3: **C:\WebRoot\usr\db** contains .db files that we do not want to include the sync
Case 4: **C:\WebRoot\system\logs** folder contains files and subfolders that we do not want to include in the sync at all

To exclude these files and folders, we need to create the following exclude filter:

File name matches: Thumbs.db;C:\WebRoot\Scripts*.php;C:\WebRoot\usr\db*.db
Folder name matches: C:\WebRoot\system\logs

Here we used full paths in the filters. We could also have used partial filters (paths with * characters) like this:

File name matches: Thumbs.db;*\Scripts*.php;*\db*.db
Folder name matches: *\system\logs

But here the folder name filter could also match a folder like C:\WebRoot\html\system\logs, so be extra careful when using partial paths in filters.

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Using source or target paths in filters

You can use either source or target folder names in full/partial paths, so, using the previous example, we could also have entered the same filters like this:

File name matches: Thumbs.db;/pub/public/Scripts/*.php;/pub/public/usr/db/*.db
Folder name matches: /pub/public/system/logs

It's up to you to choose which method to use.

Related

- Include folders filter sample
- Exclude files and folders filter sample

5.10 Filter sample - Include Folders

We have a sync task that uploads web site files from the local folder to the remote server folder. The sync task set up looks like this:

Source: **D:\webroot**
Target: **/Upload/webroot**

When this sync task is run without any filters, by default all folders are included, and results look like this:

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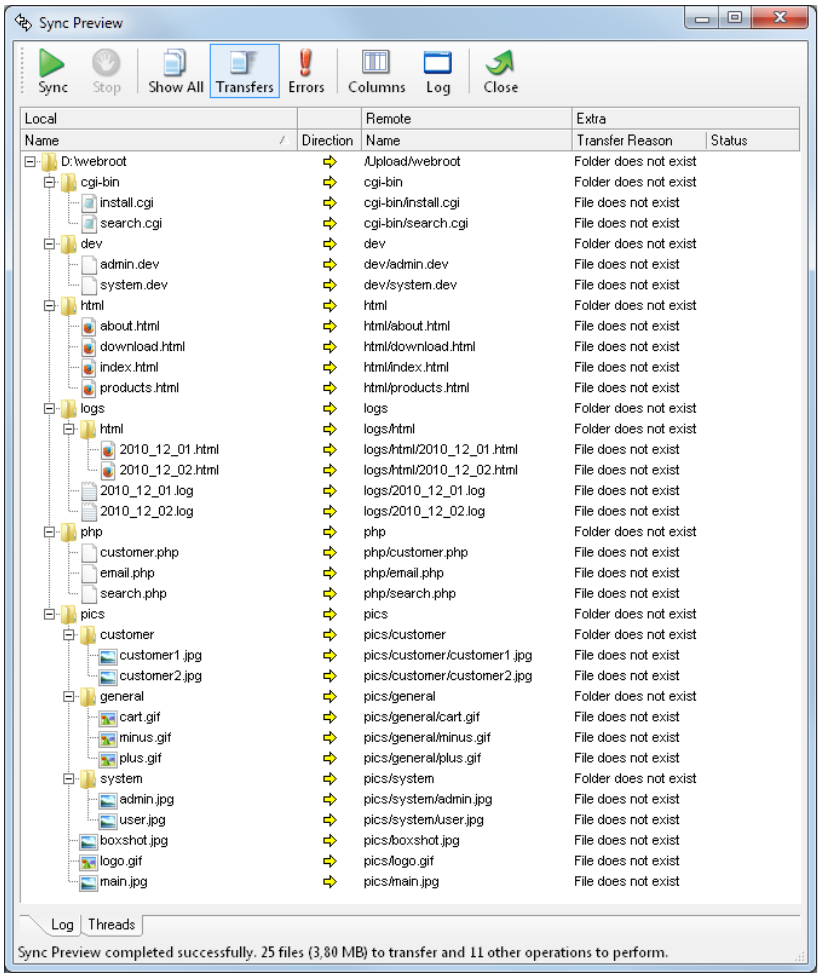
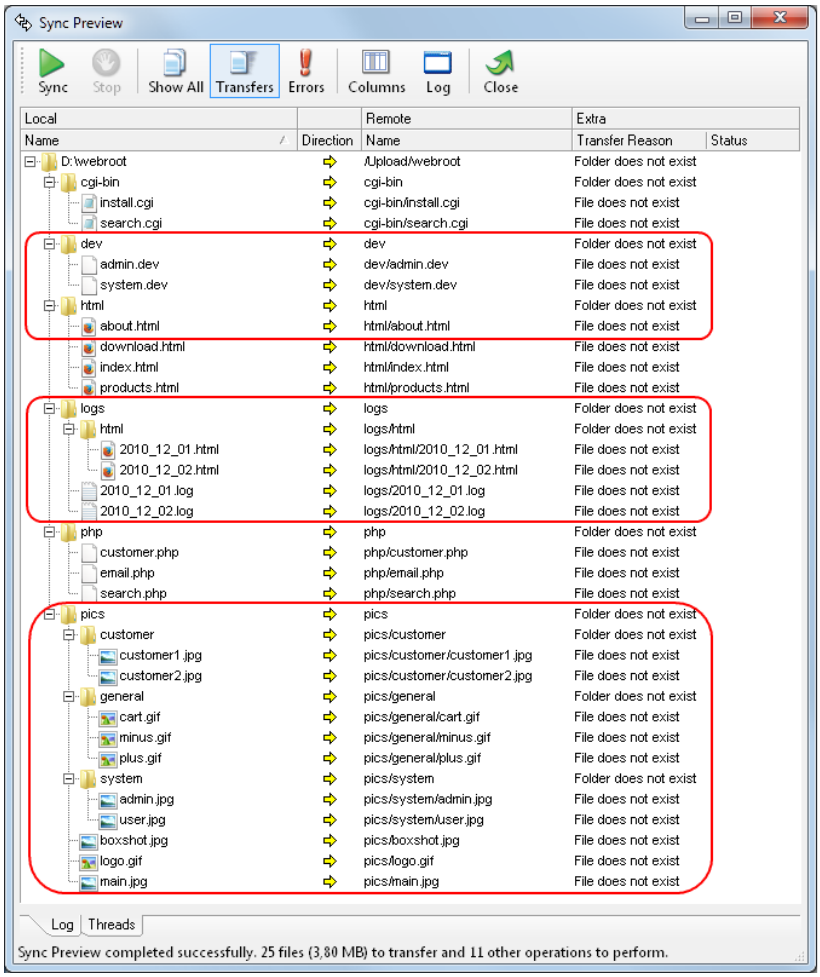


This is fine, but we'd want to transfer only following folders:



In other words, we want to transfer only c:\webroot\html, c:\webroot\logs and c:\webroot\pics folders. You can do this by creating an Include Folders-filter like this:

1) Run Sync Preview
2) On Sync Preview-window, right-click on top of the html - folder name, and select Add Folder to Include Filter-command from the popup menu, like this:

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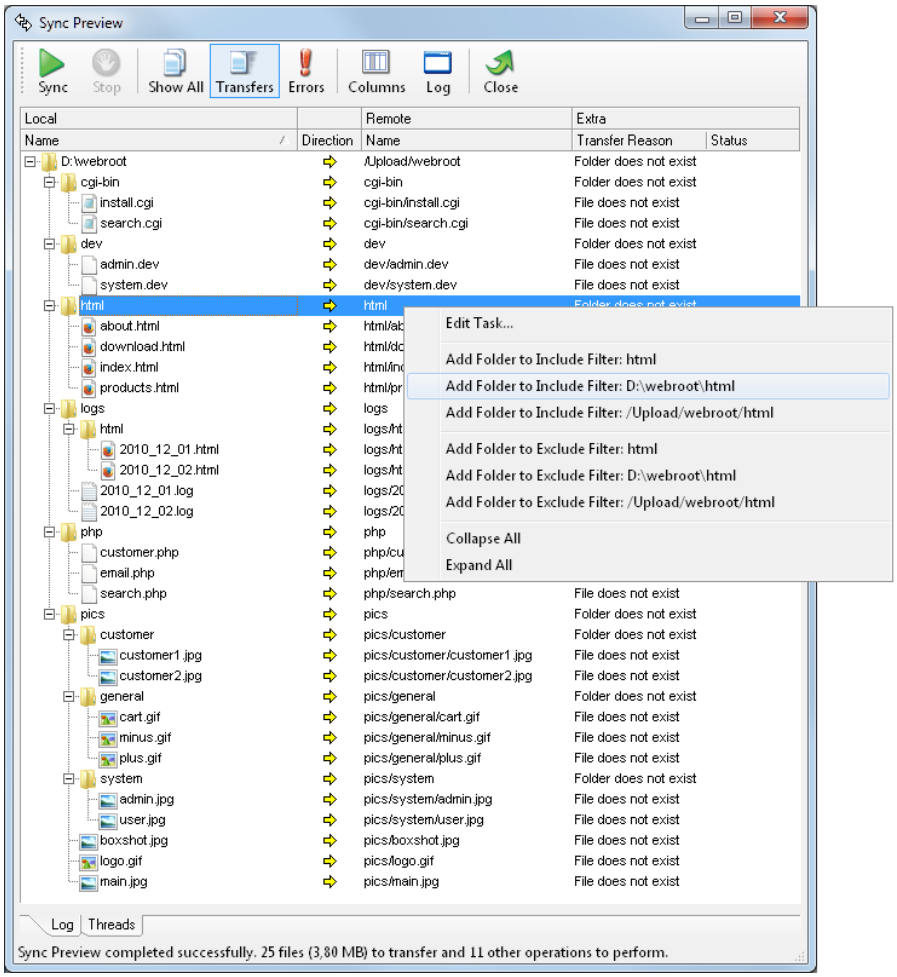

3) Now Edit Task-window opens. You need to turn on Include Folders-filtering by checking the "Folder name matches filter entered below" check box. Also add a semicolon to the end of the folder name, and save changes by clicking Save-button.

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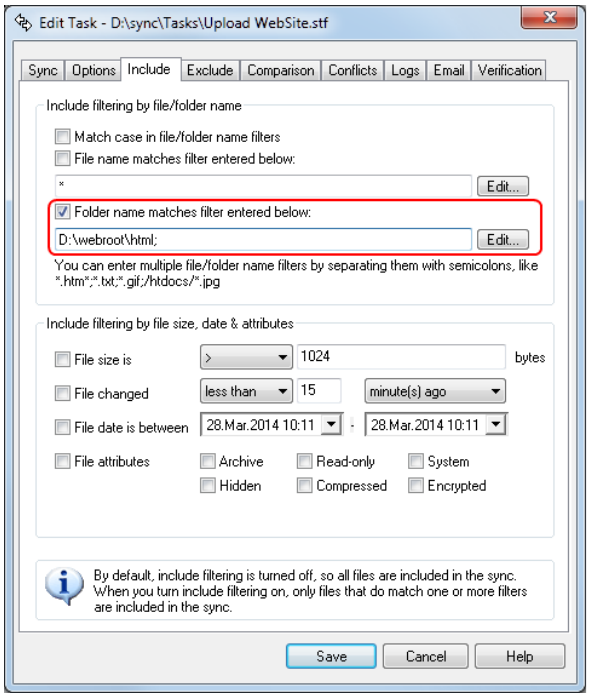
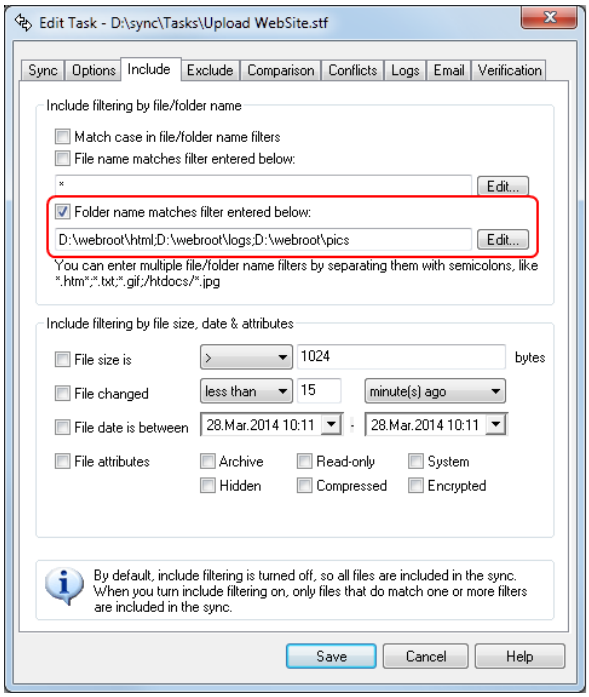


4) You can now repeat the process for other two folders (or edit text field manually), until Edit Task-window looks like this:

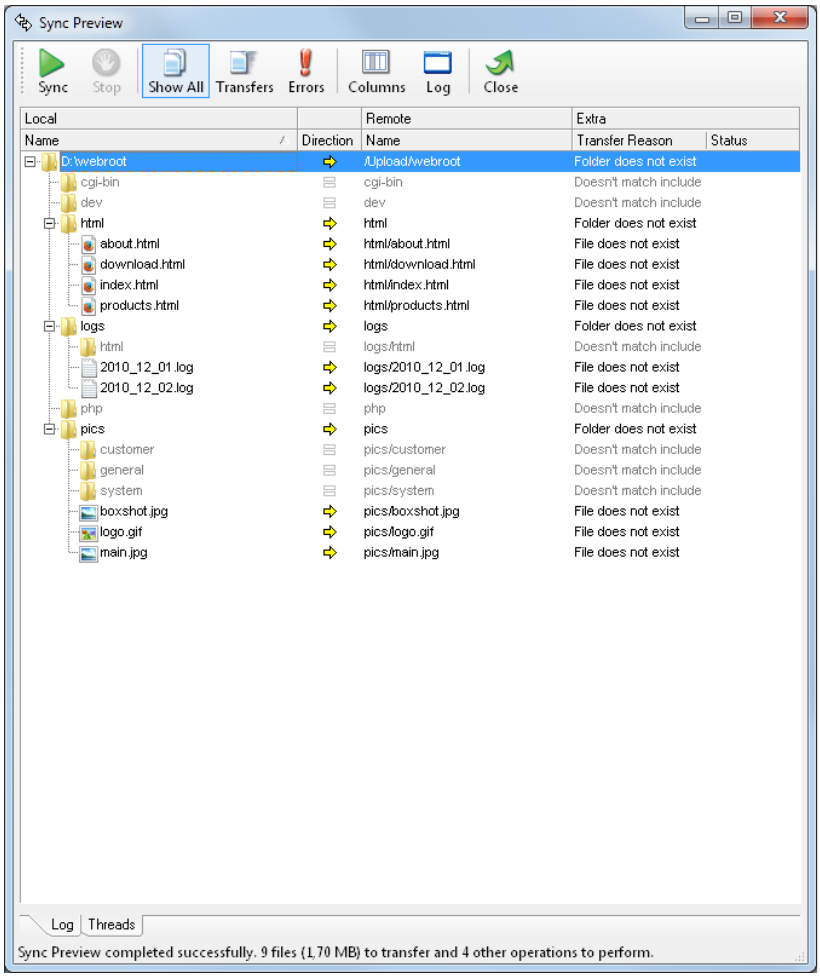


Filter text field now contains (notice semicolons between folder names):

d:\webroot\html;d:\webroot\logs;d:\webroot\pics

Now it's time to check how this filter works. So run sync preview again, and after preview completes,

click Show All - button on the Sync Preview - window toolbar:



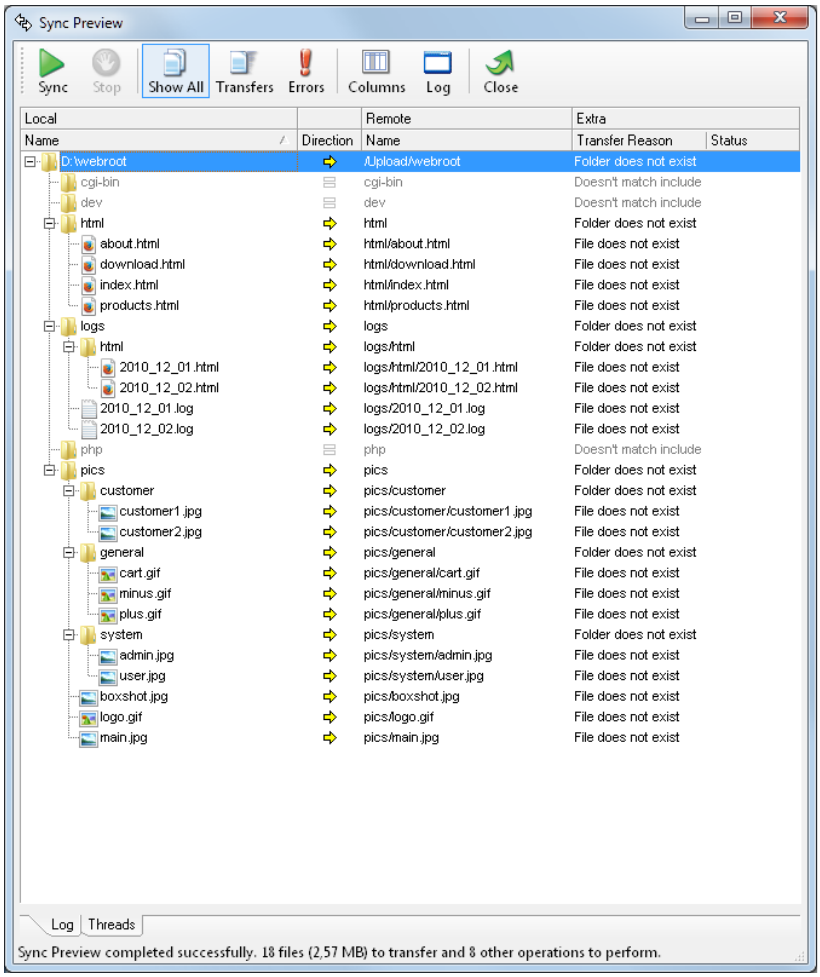
This looks almost correct, but subfolders of the c:\webroot\pics and c:\webroot\logs were not included. "Why is that?" you might ask. The answer is that only exactly matching folder names were included in the sync. To extend matching, you need to match c:\webroot\pics folder PLUS all its subfolders, by adding a * character to the end of the folder name, like this:

d:\webroot\html;d:\webroot\logs*;d:\webroot\pics*

In other words:

d:\webroot\pics <- Matches only this folder, but not its subfolders
c:\webroot\pics* <- Matches this folder AND its subfolders

Now save changes to task, and run Sync Preview again (and click Show All-button on the toolbar):



Now results look correct, and only d:\webroot\html, d:\webroot\logs and d:\webroot\pics folders with their subfolders were transferred.

Related

- Exclude files and folders filter sample

5.11 Filter sample - Exclude Files and Folders

We have a backup sync task that downloads files from the remote server folder to the local folder. The sync task set up looks like this:

Source: **/website**
Target: **C:\Backup\website**

When this sync task is run without any filters, by default all files and folders are included, and nothing is excluded. But with this backup sync task we **do not** want to download following files and folders:

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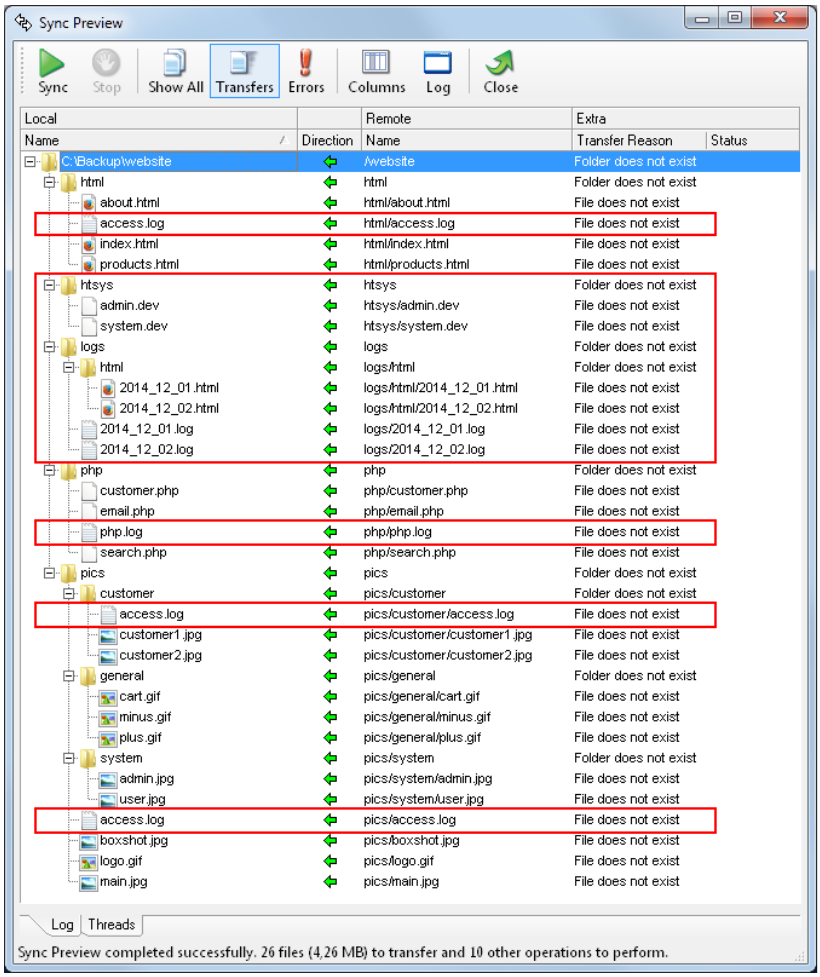

In other words, we do not want to download:

1) **/website/htsys** folder
2) **/website/logs** folder and subfolders
3) Any log files with **.log** extension

You can do this by selecting Edit Task-command and clicking Exclude-tab. Then add following Exclude filters:

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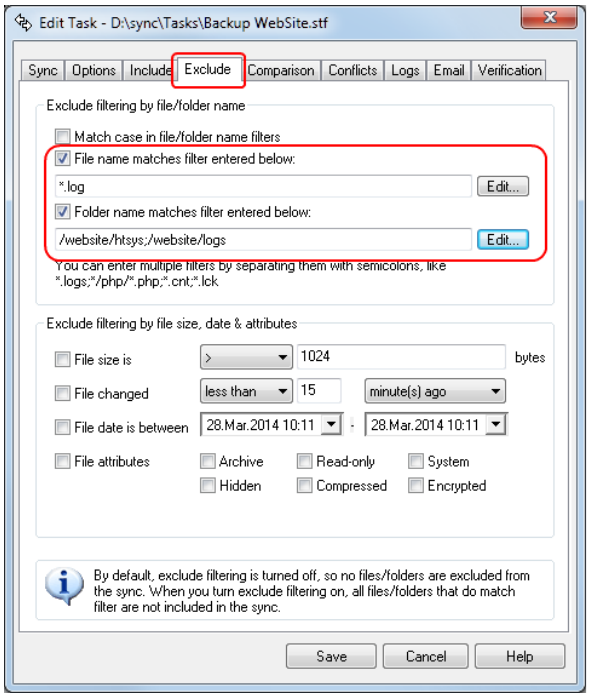
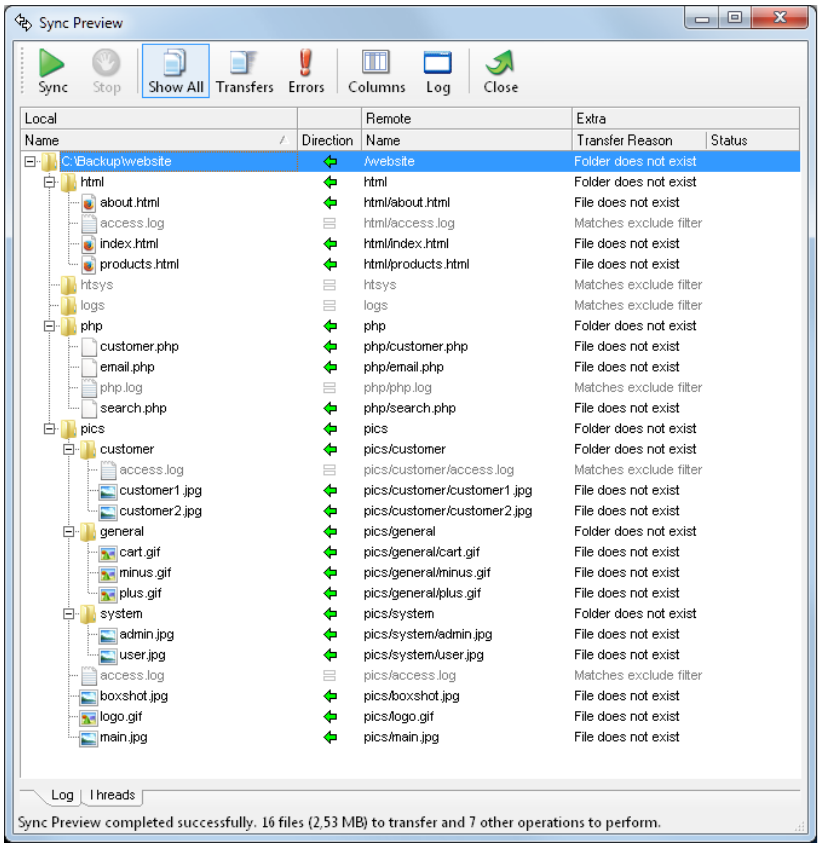


Save changes and run Sync Preview again. Then click Show All - button on the toolbar. Results look like this:



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Now this backup sync task downloads only relevant files and folders.

Related

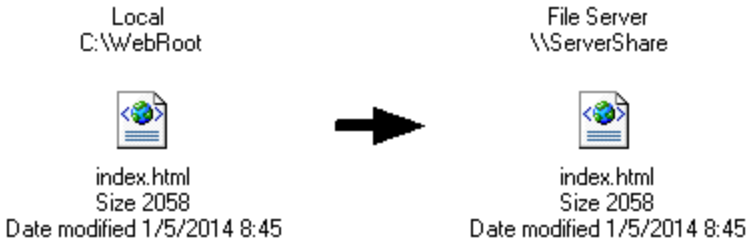
- Include folders filter sample

5.12 SyncDB

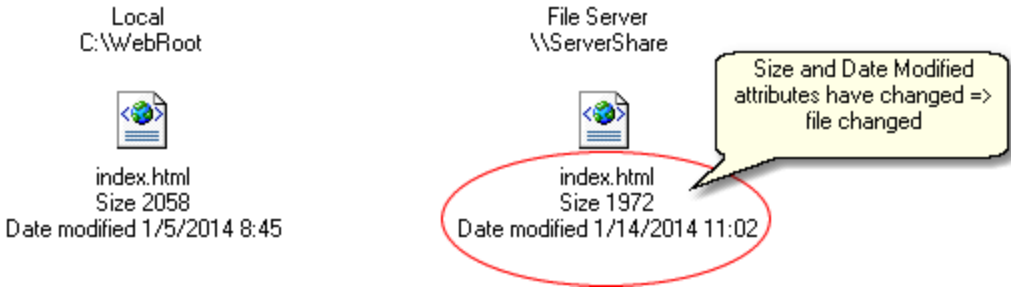
SyncDB is a very important feature of the BatchSync software. SyncDB is a special log file that tracks changes to the source and target files. It records the file size and date for all files in the sync. On the next run, this recorded info is compared to the present size and date values. If these values are different, then the file has changed since the last sync and will be transferred. But why use a separate log file to record and compare date and size values? Why not just the compare the current date and size values of the source and target files? The answers to these questions will follow, please read on.

Copying files between folders in the local or network folders

When you copy a file from the local folder to another local or network folder, all its current attributes, like date modified and size, stay intact in the copy process.



If later either of these copies is changed, it's easy to see this by simply comparing the file date and size attributes.



In the above scenario, there would be no need to track changes with the separate SyncDB file, as we can clearly see that the network copy of the file has changed. This fact applies to all cases when copying files between local and network folders: no SyncDB file would really be needed to detect changes in the files. But things are quite different when dealing with files that are uploaded to FTP, FTPS, or SFTP Servers.

Uploading files from a local folder to an FTP server

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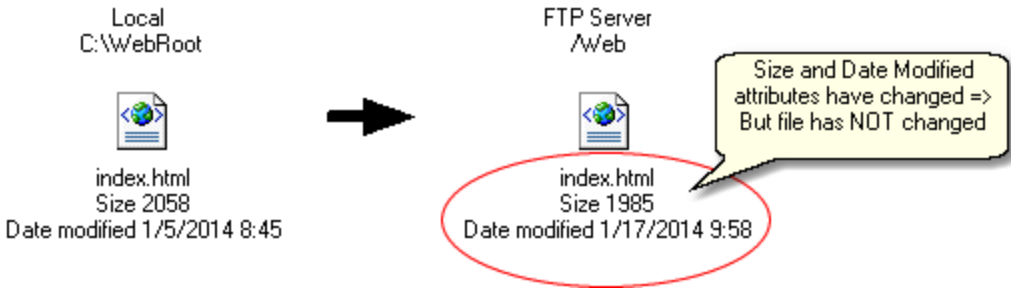
When you copy, i.e. upload, a file from a local folder to an FTP server, none of its current attributes, like date modified and size, are preserved. This is what happens:



What actually happened here? Two things: First, the **file date** changed due to shortcomings in the FTP protocol, with the result that the uploaded file date will be set to the current date/time of the FTP server's clock. So the date is the same as the upload date/time, but notice, this is not the same as your local computer date/time. We cannot tell the actual time difference between your local computer and the FTP server's clock. But it is some seconds, some minutes or even some hours (if the server is in a different time zone). Then you ask, why not set the uploaded file date/time to the same value as the local file? Good question. And the answer is simply that this is not part of the FTP standard specification. In other words, there is no way in the FTP protocol to set the file date stamp. This sounds unbelievable, but it is a fact. There have been numerous attempts to add this feature to the FTP protocol, but none of these has really succeeded and it's not part of the standard. There are actually some non-standard ways to set the uploaded file date, but very few FTP servers support them (but if server supports these non-standard ways to set date, BatchSync uses them).

Second, the **file size** was changed too. It should be noted that this happens only for FTP servers running Linux, Solaris, HP/UX, or some other unix variant. But some 95% of internet ftp servers ARE running one of these unix variants, so actually this happens on almost all FTP servers. Also, it should be noted that this happens only when uploading ASCII files, like text files, HTML pages, log files, PHP scripts, etc. But since they are very common file types, this happens on almost all file transfers. Read more about this in the info box below.

ASCII File size differences in Windows and Unix machines

The file sizes are different, because Windows and FTP servers use different methods for separating text lines in ASCII files, like in HTML web pages. The FTP servers are most commonly unix boxes, which use a single linefeed (LF) character to separate lines. Windows computers use two characters (CR + LF) to do the same thing. Therefore, text files are smaller on the server than on the disk of the Windows machine. This is normal behavior, not a bug or an error; these two operating systems were simply designed to be different.

This difference applies only to text files that are transferred in ASCII mode. BatchSync uses global options (see menu Tools > Options) to determine which files are transferred in ASCII mode. You can change the list of file types there. This list is used only when the "Auto" file transfer mode is selected for the site (see Edit Task > Edit Site > File Transfer Mode-drop down list).

The bottom line is that **both the file date and size change when a file is uploaded**. So we cannot use file attributes to track changes and see whether a file has changed on the server. If you compare

these two files later, it looks like the file on the server is newer, because its date stamp says so. And its size is different, so its contents must have been modified since it was uploaded. Yet, neither is true, the file is the same as the local source file, and it has not been changed in any way. And here is the problem, how do you tell when a file has really changed, and how can you successfully compare local and remote files?

The solution is the SyncDB tracking file.

SyncDB file

The SyncDB file records the source and target file attributes like date & size for later use, **AFTER successful transfer**. So we record the **new size and date** of the file on the server. Notice that we do not care if and when these attributes are different than the values on the local file, but we simply record the new attribute values. This information is saved to the SyncDB file, and used the next time when the sync is run.

The next time the sync task is run, the saved SyncDB info is compared to the current source and target file attributes. If the current local file attributes are same as values in the SyncDB file, then the local file has not been modified since the last run. Similarly, if the current remote file attributes are the same as the values in the SyncDB file, then the remote file has not been modified since the last sync either. If neither file's attributes have changed, then there is no need to transfer the file.

Solution to the problem: Both the file's date and size were changed when the file was uploaded

As we just record the new date value the file gets on the server, it does not matter what the time difference is between the local and server computer clocks, we can always detect when the date has changed since the last run. Similarly, as we just record the new size the file gets on the server, it does not matter how the remote server stores ASCII files, and how much different these file sizes are when uploaded; we can always detect when the size has changed since the last run.

The above logic relies on the fact that we know when a file was uploaded successfully, so a size difference is not due to a transfer error where only part of the file was transferred. Therefore, if a file has transfer errors (even after multiple retries), we do not record its date and size in the SyncDB file, and therefore the next time the sync is run, the file is forced to be transferred.

Syncing folders for the first time when they are already in sync

When running a sync for the **first time** between two folders that are already in sync, all of the files might be flagged for transfer. This is because the file sizes and/or dates are different in the source and target, and there is no SyncDB file yet available to assist in the file comparison. This is a problem if there are gigabytes of data to transfer. Fortunately, there is an option on the Edit Task > Comparison tab that helps in these situations. This option is "Only reset SyncDB file on the next sync run, do not transfer any files."

When checked, the software rebuilds the SyncDB tracking file by scanning through all of the files on the source and target. All of the files found on both sides are considered to be in sync, and are not transferred after this reset. This reset sets a starting point for tracking changes to the files, and only changes occurring after this reset will be considered for transfer. This check box clears itself automatically after rebuilding the SyncDB tracking file.

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SyncDB file details

The SyncDB file is created after each sync by recording the file attributes of all the successfully transferred files. The SyncDB file is saved to the same folder as the task file, with the same file name, but using the .SDB extension. So if the task file is

```
C:\SyncTasks\Upload Web Site.STF
```

then the SyncDB file is saved as

```
C:\SyncTasks\Upload Web Site.SDB
```

The following attributes are saved to the SyncDB file:

- Local file date & time
- Local file size
- Remote file date & time
- Remote file size

When running the sync, BatchSync checks whether the SyncDB file exists for the sync task. If it does, the file attributes are loaded and then compared to both the local and remote files to see whether the current attributes are the same as those recorded in the SyncDB file. The following comparisons are made:

- If Current Local file date & time <> SyncDB Local file date & time => Local file has changed
- If Current Local file size <> SyncDB Local file size => Local file has changed
- If Current Remote file date & time <> SyncDB Remote file date & time => Remote file has changed
- If Current Remote file size <> SyncDB Remote file size => Remote file has changed

These comparisons are used when deciding whether the file should be transferred, and in what direction:

- One-way sync from local -> remote, upload file if either local or remote file changed
- One-way sync from local <- remote, download file if either local or remote file changed
- Two-way sync local <-> remote, transfer file if either local or remote file changed, transfer newer file (either local or remote)

When SyncDB is not used

You can disable SyncDB via Task options. If SyncDB is disabled, then files are compared using the rules set in the Comparison-tab of Task options. In this case, BatchSync cannot track changes to files, so it does not know when conflicts occur. Also it is possible for file size differences, system clock differences, and time zone differences to cause problems when BatchSync tries to determine what files need to be transferred.

Normally it is highly recommended to keep SyncDB enabled.

5.13 Options

General

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Files transferred in ASCII mode when Auto-transfer mode is selected in Server Options

This field contains a list of filenames that will be transferred in ASCII mode. Use semicolons to separate entries. The ASCII mode is automatically used for all files matching the entries in this list, if Edit Task > Edit Server > File transfer mode > Auto is selected.

Mouse double-click action in main window

Selected action is taken when you double-click a sync task in the main window task list.

Generate a warning message in logs if file transfer is retried

When checked, software adds a warning message to the transfer and error logs (if extra logging is enabled for the sync task in Edit Task > Logs-tab > Enable transfer/error logging). The warning message is generated only if file transfer succeeds, but it's interrupted and retried during the transfer. If file transfer does not succeed, error message is always generated, regardless of this setting. So with this setting enabled, message shown in the error log looks like this:

```
WARNING: RetryCount:2 Transferred 480 MB C:\backup\bigfile.dat ->
/Upload/backup/bigfile.dat
```

This message means that bigfile.dat **was successfully transferred**, but it was interrupted (for some reason) during the transfer two (2) times, so there were 2 retries during the transfer. But with retries, file was transferred in full. This is different to error message, that looks like this:

```
ERROR: Connection timeout (40421) RetryCount: 5 None C:\backup\bigfile.dat ->
/Upload/backup/bigfile.dat
```

This message means that bigfile.dat **was not successfully transferred**, but it was interrupted during the transfer 5 times (and sync task has max limit 5 for retries in Edit Task > Edit Server > Timeouts-tab > Retry count max). This error message is always added to the logs, regardless of this check box setting.

History Log

The history log contains run info and statistics about all of the sync tasks that were run on this computer. You can view this history log by clicking the History button on the left hand side of the main window. This log is shared by all tasks, and it's always enabled, so you cannot disable it.

History log folder

The history log files are written to the folder specified in this field.

Max number of history items

This setting specifies the maximum number of history entries available in the History pane. The older entries over this max limit are automatically deleted. We recommend that you keep this setting below 1000, as a larger setting will slow down the program startup.

Fonts

The Sync/Sync Preview window uses these fonts and colors to display the list of files to download, upload and delete. The files that won't be transferred are the ones that are already in sync.

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Messages

Show message box window

The software displays a message box window before or after certain actions are taken. You can control what messages you want to see, and what messages you think are not necessary and maybe just slow down your work.

Show notification popup message

Notification popup messages are shown in the lower right hand corner of the computer screen, in the notification area above the task bar. These messages alert you to the completion of a sync preview or sync run. Popups are handy in cases like when a sync is run in the background, and you want to be notified when the sync run is complete.

Note! Notification popup messages are only shown when running a sync task in Task Editor. They are not shown when running syncs with the command line SYNC.EXE tool.

5.14 SSH public key authentication

BatchSync can use a public key authentication method for SSH logins. In this method, the public/private key pair is used to authenticate the user instead of a password. This method provides better safety by preventing brute force SSH attacks when password-based authentication methods are disabled on the server.

NOTE! The term "public key authentication" is somewhat misleading, as this authentication method uses a public & private key **pair** to perform authentication:

- Public key: This stays always on the SSH server
- Private key: This stays always on the client, i.e. BatchSync holds the private key

1. Generate new public/private key pair

First, you need to generate a new public/private key pair, like this:

Go to Options > SSH Security tab

- Click the Generate new key pair button
- Key generation window opens
  - Select options for new key pair (the default values usually work fine)
  - Enter passphrase to encrypt private key locally
  - Enter filenames for both private and public key (or use default values)
  - Select key format: openssh or ssh.com
  - Click the Generate button
- Now the new key pair is ready for use

Alternatively you can generate the key pair on your ssh server

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2. Upload new PUBLIC key to the server

Upload the just-generated public key to the server. You can see the path for the file in the text field. The default filename for the generated public key is **Identity.pub**. Do NOT upload the PRIVATE key.

3. Add key to the server's list of authorized keys

Before the key pair can be used, the public key must be added to the SSH server's list of approved keys. Usually this can be done by adding the public key to the **authorized_keys** file. This file contains all of the public keys for the user. You can usually find this file at $HOME/.ssh/authorized_keys.

NOTE: The location of the file is system dependent. Please consult your SSH server user manual for settings needed to turn on the public key authentication.

You can add the uploaded Identity.pub file to the authorized_keys file with the command:

```
cat Identity.pub >> authorized_keys
```

4. Make sure that server uses public key authentication

The SSH server must be configured to use public key authentication on SSH logins. Usually, this means editing the
/etc/ssh/sshd_config file to turn on the public key authentication. For example, the settings can be:

PasswordAuthentication	no
PubkeyAuthentication	yes
AuthorizedKeysFile	%h/.ssh/authorized_keys

After editing, restart the sshd server to re-read the configuration sshd_config file, something like:

sudo /etc/init.d/sshd restart

or

sudo service ssh restart

NOTE! The settings above are examples, and the settings you need are SSHD server specific. Please consult the SSH server documentation for more info.

5. Turn on public key authentication at the sync task level

- Select the sync task that should use public key authentication from the task list. Then, select the Edit Task > Edit server > SFTP-tab > Authentication method for SFTP logins: Public Key.
- Select **PRIVATE** key file you generated in step 1.
- Enter same passphrase that you entered when you generated the key pair in step 1.

NOTE! Click Load private key button to verify that the private key can be loaded successfully.

NOTE! A login password in General-tab is not used or needed on logins when public key authentication is enabled.

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6. Ready

Test sync task by running the sync preview to verify that login works properly.

Alternatively you can generate the key pair on your ssh server

You can also use public/private key pair that was generated on your ssh server. Following instructions are for linux mint, but quite similar steps can be followed on other linux servers to generate key pair.

Create .ssh directory under your home directory if it does not already exist

```
mkdir ~/.ssh
chmod 700 ~/.ssh
cd .ssh
```

Generate key pair

```
ssh-keygen -t rsa
```

Add public key to authorized_keys file

```
cat id_rsa.pub >> authorized_keys
```

Download private key

Download private key to the computer running BatchSync, and save it to C:\ProgramData\Sync\SSH2 folder. After that, you should delete private key on the server.

Load it to the sync task for use

Edit sync task to use public key authentication as shown above in step 5.

5.15 Task Optimizer

File transfer speed is dependent on many factors, like network connection speed, round-trip latency, server load and client load to name a few. BatchSync has a Buffer Size - setting, that can greatly affect the transfer speed. Task Optimizer helps you to find optimum Buffer Size-setting for your network configuration. It does this by uploading and downloading a set of files with different sizes, with different Buffer Size settings, and measures the transfer speed. Results are shown in a table where you can find the best setting for your needs.

To run the test

1. Select a set of buffer sizes to try by checking check boxes.
2. Select the file sizes that most closely resembles your common file sizes.
3. Click Run Optimizer to start the test
4. After test run completes, find the optimal Buffer Size setting from the table
5. Close Task Optimizer, and set new Buffer Size setting for the task in Edit Task > Edit Server >

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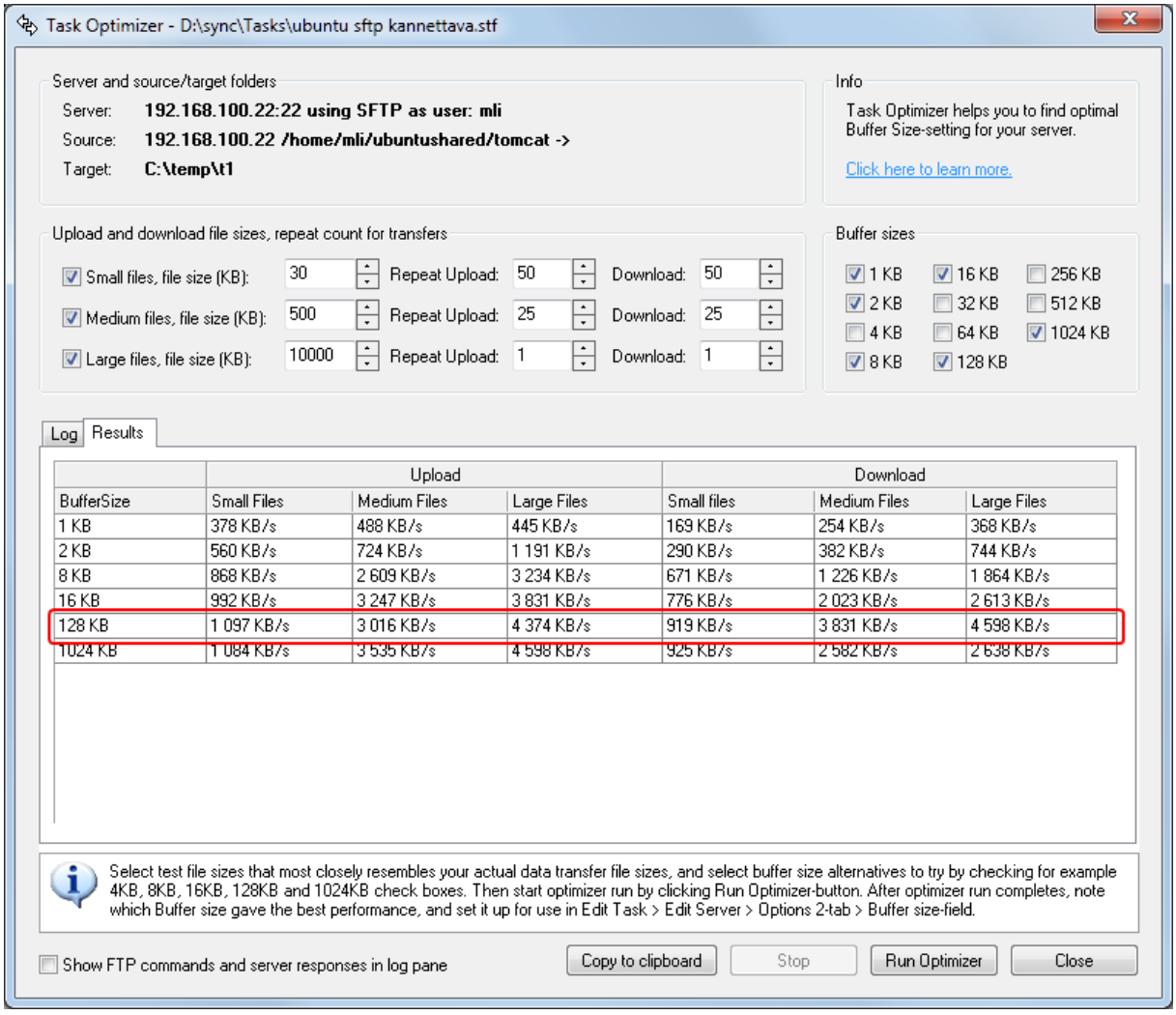
Options 2-tab > Buffer Size-field.

The screen shot below shows test run results against Linux Mint SSH server. The Buffer Size = 128KB gives clearly the fastest download speeds, so this value is chosen for the task Buffer Size.


Task Optimizer - D:\sync\Tasks\ubuntu sftp kannettava.stf
Server and source/target folders
Server: 192.168.100.22:22 using SFTP as user: mli
Source: 192.168.100.22 /home/mli/ubuntushared/tomcat ->
Target: C:\temp\t1
Info
Task Optimizer helps you to find optimal Buffer Size-setting for your server.
Click here to learn more.
Upload and download file sizes, repeat count for transfers
Small files, file size (KB): 30 Repeat Upload: 50 Download: 50
Medium files, file size (KB): 500 Repeat Upload: 25 Download: 25
Large files, file size (KB): 10000 Repeat Upload: 1 Download: 1
Buffer sizes
1 KB 16 KB 256 KB
2 KB 32 KB 512 KB
4 KB 64 KB 1024 KB
8 KB 128 KB
Log Results
Upload Download
BufferSize Small Files Medium Files Large Files Small files Medium Files Large Files
1 KB 378 KB/s 488 KB/s 445 KB/s 169 KB/s 254 KB/s 368 KB/s
2 KB 560 KB/s 724 KB/s 1 191 KB/s 290 KB/s 382 KB/s 744 KB/s
8 KB 868 KB/s 2 609 KB/s 3 234 KB/s 671 KB/s 1 226 KB/s 1 864 KB/s
16 KB 992 KB/s 3 247 KB/s 3 831 KB/s 776 KB/s 2 023 KB/s 2 613 KB/s
128 KB 1 097 KB/s 3 016 KB/s 4 374 KB/s 919 KB/s 3 831 KB/s 4 598 KB/s
1024 KB 1 084 KB/s 3 535 KB/s 4 598 KB/s 925 KB/s 2 582 KB/s 2 638 KB/s
Select test file sizes that most closely resembles your actual data transfer file sizes, and select buffer size alternatives to try by checking for example 4KB, 8KB, 16KB, 128KB and 1024KB check boxes. Then start optimizer run by clicking Run Optimizer-button. After optimizer run completes, note which Buffer size gave the best performance, and set it up for use in Edit Task > Edit Server > Options 2-tab > Buffer size-field.
Show FTP commands and server responses in log pane
Copy to clipboard
Stop
Run Optimizer
Close

5.16 Volume Shadow Copy Service (VSS)

Overview

The Volume Shadow Copy Service (a.k.a Volume Snapshot Service, VSS) is a framework to allow volume backups to be performed while applications on a system continue to write to the volumes. Backing up and restoring critical business data can be very complex due to the following issues:

- The data usually needs to be backed up while the applications that produce the data are still running. This means that some of the data files might be open, locked or they might be in an inconsistent state.
- If the data set is large, it can be difficult to back up all of it at one time.

Correctly performing backup and restore operations requires close coordination between the backup applications, the line-of-business applications that are being backed up, and the storage management hardware and software. The Volume Shadow Copy Service (VSS), which was introduced in Windows Server® 2003, facilitates the conversation between these components to allow them to work better together. When all the components support VSS, you can use them to back up your application data without taking the applications offline.

VSS coordinates the actions that are required to create a consistent shadow copy (also known as a snapshot or a point-in-time copy) of the data that is to be backed up.

Summary: VSS makes it possible to copy/backup all files in the system, even if they are locked and in-use.

Please read more about VSS:

- Wikipedia: Shadow Copy
- Microsoft TechNet

VERY IMPORTANT! The VSS is part of the operating system, not BatchSync, so **we do not provide any technical support for using VSS or methods described here.** But we try to demonstrate here how to use VSS together with SYNC.EXE to backup/transfer in-use/locked files in the system.

Using on Windows XP and Windows Server 2003

The Volume Snapshot Service was first added to Microsoft Windows in Windows XP; this version of VSS is used by NTBackup, however it can only create non-persistent snapshots (a temporary snapshot, usually used for creating a file-based backup or more generally, accessing copies of files that have been locked by applications for editing). Due to this limitation, using VSS on these systems is not described here, while it is possible.

Windows Vista, Server 2008/2012, Windows 7, 8.x and later

These operating systems fully support creating persistent snapshots. But supporting tools are badly lacking, so we use VSHADOW.EXE utility for using and creating snapshots (you can also use DISKSHADOW.EXE on Server 2008). VSHADOW.EXE utility is from the VSS SDK from Microsoft. There is a specific version for each windows version (and 32bit/64bit editions), and we have created a zip file containing different versions. This ZIP file also contains a documentation for this utility. Download it from here

- http://sitedesigner.com/dnl/vshadow.zip

Get the copy from the zip for your system and rename it as VSHADOW.EXE. To make examples simple, copy VSHADOW.EXE to same folder containing SYNC.EXE (path is C:\Program Files\BatchSync\ or C:\Program Files\BatchSync Secure\).

Creating a snapshot

For example, lets say that we want to transfer all files under c:\Windows\System32 folder. This folder

contains lot of files that are in use and locked, so they cannot be copied normally. To make all files under this path readable, we need to create a snapshot (=shadow copy) of the C: volume. So even if we want to access only single subfolder, we need to create a permanent snapshot for a whole volume. To make this happen, open a command prompt with **administrator** privileges. Then enter command:

```
C:\Program Files\BatchSync Secure>vshadow -p -script=setvar.cmd C:

VSHADOW.EXE 2.2 - Volume Shadow Copy sample client
Copyright (C) 2005 Microsoft Corporation. All rights reserved.

(Option: Persistent shadow copy)
(Option: Generate SETVAR script 'setvar.cmd')
(Option: Create shadow copy set)
- Setting the VSS context to: 0x00000009
(Gathering writer metadata...)
(Waiting for the asynchronous operation to finish...)
Initialize writer metadata ...
Discover directly excluded components ...
- Excluding writer 'BITS Writer' since it has no selected components for restore
.
- Excluding writer 'MSSearch Service Writer' since it has no selected components
 for restore.
- Excluding writer 'Shadow Copy Optimization Writer' since it has no selected co
mponents for restore.
Discover components that reside outside the shadow set ...
Discover all excluded components ...
Discover excluded writers ...
Discover explicitly included components ...
Verifying explicitly specified writers/components ...
Select explicitly included components ...
 * Writer 'System Writer':
   - Add component \System Files
 * Writer 'ASR Writer':
   - Add component \ASR\ASR
  - Add component \Volumes\Volume{341603ab-9a4f-11dc-9040-806e6f6e6963}
  - Add component \Volumes\Volume{341603aa-9a4f-11dc-9040-806e6f6e6963}
   - Add component \BCD\BCD
   - Add component \Disks\harddisk0
 * Writer 'WMI Writer':
   - Add component \WMI
 * Writer 'COM+ REGDB Writer':
   - Add component \COM+ REGDB
 * Writer 'Registry Writer':
   - Add component \Registry
Creating shadow set {e6b9617c-6e02-461b-8b76-a164e399beaa} ...
- Adding volume \\?\Volume{341603aa-9a4f-11dc-9040-806e6f6e6963}\ [C:\] to the s
hadow set...
Preparing for backup ...
(Waiting for the asynchronous operation to finish...)
(Waiting for the asynchronous operation to finish...)
Creating the shadow (DoSnapshotSet) ...
(Waiting for the asynchronous operation to finish...)
(Waiting for the asynchronous operation to finish...)
Shadow copy set successfully created.

List of created shadow copies:
```

```
Querying all shadow copies with the SnapshotSetID {e6b9617c-6e02-461b-8b76-a164e
399beaa} ...

* SNAPSHOT ID = {f50514b6-1208-4d42-88a4-e822311f2d2f} ...
   - Shadow copy Set: {e6b9617c-6e02-461b-8b76-a164e399beaa}
   - Original count of shadow copies = 1
   - Original Volume name: \\?\Volume{341603aa-9a4f-11dc-9040-806e6f6e6963}\ [C:
\]
   - Creation Time: 20.1.2011 12:19:49
   - Shadow copy device name: \\?\GLOBALROOT\Device\HarddiskVolumeShadowCopy23
   - Originating machine: Kannettava
   - Service machine: Kannettava
   - Not Exposed
   - Provider id: {b5946137-7b9f-4925-af80-51abd60b20d5}
   - Attributes:  No_Auto_Release Persistent Differential

Generating the SETVAR script (setvar.cmd) ...
- Mark all writers as successfully backed up...
Completing the backup (BackupComplete) ...
(Waiting for the asynchronous operation to finish...)
(Waiting for the asynchronous operation to finish...)

Snapshot creation done.
```

Now snapshot for C: is created.

Execute setvar.cmd

The previous call to VSHADOW.EXE also created a **setvar.cmd** file (look at the command line script-parameter), execute it like this:

```
C:\Program Files\BatchSync Secure>setvar

[This script is generated by VSHADOW.EXE for the shadow set {e6b9617c-6e02-461b-8b76-
a164e399beaa}]

C:\Program Files\BatchSync Secure>SET SHADOW_SET_ID={e6b9617c-6e02-461b-8b76-
a164e399beaa}
C:\Program Files\BatchSync Secure>SET SHADOW_ID_1={f50514b6-1208-4d42-88a4-
e822311f2d2f}
C:\Program Files\BatchSync Secure>SET
SHADOW_DEVICE_1=\\?\GLOBALROOT\Device\HarddiskVolumeShadowCopy23
```

Now we can access created snapshot using %SHADOW_ID_1% environment variable (we need this on the next step).

Map snapshot to drive letter

Then map new snapshot to available drive letter, like in this example we map it to X:

```
C:\Program Files\BatchSync Secure>vshadow -el=%SHADOW_ID_1%,X:
```

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```
VSHADOW.EXE 2.2 - Volume Shadow Copy sample client
Copyright (C) 2005 Microsoft Corporation. All rights reserved.

(Option: Expose a shadow copy)
- Setting the VSS context to: 0xffffffff
- Exposing shadow copy {f50514b6-1208-4d42-88a4-e822311f2d2f} under the path 'X:
'
- Checking if 'X:' is a valid drive letter ...
- Shadow copy exposed as 'X:\'

C:\Program Files\BatchSync Secure>
```

We can now access the snapshot of the C: drive under X: drive. The X: drive contains static files that can be copied and backed up even system continues to write to C: drive, and files continue to change. This is sort of magic that happens behind the scenes.

Run sync task to create an offline backup

Now create **Upload.Stf** sync task in Task Editor that uploads X:\Windows\System32 to remote server for offline backup (NOTE: We are using X: drive, not C: drive). Then run it with SYNC.EXE (notice that we are still using the same command prompt with administrator privileges):

```
C:\Program Files\BatchSync Secure>sync c:\ProgramData\Sync\Upload.Stf

------------------------------------------------------------------------------
BatchSync Secure FTPS/SFTP 3.0.8

Sync task : C:\ProgramData\Sync\Upload.stf
Direction : OneWayUpload
Source    : X:\windows\system32
Target    : /home/admin/upload/system32
Recursive : Yes
Symlinks  : No

Sync task loaded. Running...

------------------------------------------------------------------------------
STATISTICS

No action: 0
Errors: 0
Average transfer speed: 1 855,1 KB/s
Average transfer bandwidth usage (w/ 12% packet+protocol overhead): 16695,6 Kbps

Total time: 20 m 7 secs
Transfer time: 19 m 29 secs
Total bytes transferred: 2117,31 MB (2220156007 bytes)
Folders created:1351
Transferred: 13432 files
------------------------------------------------------------------------------
Sync completed OK
------------------------------------------------------------------------------
```

After SYNC.EXE completes, all files have been backed up to remote offline storage.

Delete snapshot

So snapshot is no longer needed, and we can delete it:

```
C:\Program Files\BatchSync Secure>vshadow -dx=%SHADOW_SET_ID%

VSHADOW.EXE 2.2 - Volume Shadow Copy sample client
Copyright (C) 2005 Microsoft Corporation. All rights reserved.

(Option: Delete a shadow copy set)
- Setting the VSS context to: 0xffffffff
- Deleting shadow copy set {e6b9617c-6e02-461b-8b76-a164e399beaa} ...

C:\Program Files\BatchSync Secure>
```

How to automate all this

You can automate all these steps by creating the Upload.cmd file that runs all commands in a sequence. Upload.cmd looks like this:

```
CD "C:\Program Files\BatchSync Secure"
vshadow -p -script=setvar.cmd C:
setvar
vshadow -el=%SHADOW_ID_1%,X:
sync c:\ProgramData\Sync\Upload.Stf
vshadow -ds=%SHADOW_SET_ID%
```

Now you can run it on the command line (remember to have proper access rights, like administrator), or schedule it with Windows Task Scheduler. When scheduling, again, remember proper access rights, run it with admin rights, or under LOCALSYSTEM.

Windows Server 2008

Windows Server 2008 ships with official DISKSHADOW.EXE tool that exposes the functionality offered by the Volume Shadow Copy Service (VSS). So instead of using VSHADOW.EXE shown in this example, you can use DISKSHADOW.EXE. Highly recommended!

Problems?

The VSS is a very complex system, and there are many things that can go wrong. **We do not provide any technical support for VSS or any methods described here.** Google is your best friend when trying to find more information on this subject.

5.17 Edit Task-window

5.17.1 Sync-tab

One-way sync

One-way sync is most commonly used to create backups. In one-way sync, all of the new and changed files found on the source are transferred to the target. No changes on the target are transferred to the source.

You can optionally enable the deletion of any extra files (see the Options tab) found on the target. With this option enabled, the files that do not exist on the source are also deleted on the target. In this way, the target is an exact copy of the source.

Notice! You can easily convert a sync task into a file copy task or file move task.
Learn more here.

Two-way sync

Two-way sync ensures that two folders (and their subfolders) remain in sync when files are changed on both sides. BatchSync does this by scanning all of the files in the source and target folders, and locating the new and changed files on both sides. It then transfers all of the files that are newer than the corresponding files on the other side.

You can optionally enable propagated deletions (see the Options tab). With this option enabled, if you delete a file on one side, BatchSync will propagate this deletion to the other side by deleting this same file on the other side. In this way, both sides contain exactly the same set of files.

Source and Target

The available source and target types are:

- Local or Network folder. The folder is accessible via a local or network path, like C:\WebRoot or \\Server\SharedFolder
- FTP, FTPS, and SFTP Server. The folder is accessible via an FTP server (FTP), FTP server with SSL encryption (FTPS), or SSH2 server using the SFTP protocol.

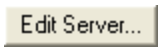
The following transfer combinations are possible:

- Local or Network folder <-> FTP, FTPS or SFTP Server
- FTP, FTPS, or SFTP Server <-> Local or Network folder

Notice! The support for FTPS and SFTP servers requires the Secure edition.

FTP, FTPS, or SFTP Server <-> FTP, FTPS or SFTP Server transfers are not possible (aka FXP transfers).

When the Local or Network folder - option is selected, click the button to browse to the folder or enter the name of the folder in the Folder name-field.

When the FTP, FTPS, or FTPS Server - option is selected, click the  button to enter server connection parameters like the server address, username, passwords, etc. In the same window you can also select the protocol used to make a connection (FTP/FTPS/SFTP). After entering the server connection parameters, enter the folder name, like /httpdocs or /pub/html, in the Server Folder-field.

You can swap the source and target by clicking the button.

Edit Server button

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Each sync task has its own Server Settings. So modifying the server settings in one task does not alter the server settings in other tasks. You can access server settings via clicking Edit Server button. Server settings contains following tabs:

- General-tab
- Firewall-tab
- Timeouts-tab
- Options-tab
- Options 2-tab
- SFTP-tab
- FTPS-tab

Date Variables

Click the *Date variables* link to add a date variable to the folder name. These date variables can be used in the source and target folder names to create dynamically changing folder names. Usually, these are needed when creating a backup sync task, where part of the target folder name is evaluated to current date values. Read more about date variables here.

Save As

Task files are saved as text files, one task per file. Tasks are saved to the folder indicated in the Save Task to Folder-field. Enter the filename for the task without the path. You likewise don't need to enter the .STF extension, it's added automatically.

If you later edit the task, and change its filename here, then the task is saved with a new filename and the original task file is left intact. In this way you can create multiple tasks by using one task as a starting point, and saving a copy under a new name.

Description

Enter a free form description for the task. This description is shown in the Details-mode in the main window.

5.17.2 Options-tab

Include subfolders

If checked, all subfolders are processed in the sync recursively. If you want only a subset of folders to be included, you can use Exclude filtering (see the Exclude-tab).

Include symbolic links

If checked, processes the symbolic links in unix type machines. The symbolic links are resolved to either files or folders, and then processed accordingly.

One-way sync, delete extra files/folders on target

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This option is used only on one-way syncs. When checked, deletes files and folders from the target that do not exist on the source. A list of the deleted items is added to the history and transfer logs.

This option cannot be used together with Delete source files after transfer or Move source files to archive folder options.

One-way sync, delete source files after successful transfer

When checked, it deletes files on the source after they have been 100% successfully transferred to the target. In other words, it moves files from the source to the target. Files are not deleted on the source if they are not 100% fully transferred to the target. This feature can be used to create a hot-folder sync task that will transfer all of the files in the source hot-folder to the destination folder, like this:

C:\OutBox -> ftp.server.com/InBox

As an example, the following files are copied to the C:\OutBox:

Source C:\OutBox	**Target** ftp.server.com/InBox
\Backup.zip \Notes.txt \Doc\ProjectPlan.doc \Doc\Version.doc	

Sync task is run, and here are the results after the sync run:

Source C:\OutBox	**Target** ftp.server.com/InBox
\Doc (empty folder is not deleted)	/Backup.zip /Notes.txt /Doc/ProjectPlan.doc /Doc/Version.doc

Notice! All of the files in the source subfolders are included in the operation, and corresponding folders are created on the target, but **folders are not deleted on the source** after the sync run. **Only the source files are deleted**.

Notice! If exactly the same file is copied **again** to the source, and then the sync task is run, the file is NOT transferred, nor deleted, if the same file still exists on the target. This is because the software by default synchronizes files, i.e., transfers them ONLY if identical files do not already exist on the target. If this is not what you want, but instead, you want to transfer and delete files on every sync run, then you can go to:

Edit Task > Comparison tab

> Uncheck Use SyncDB check box
> Uncheck Compare Dates check box

With these changes, no comparisons are made, and all of the files that show up in the C:\OutBox are always moved to the /InBox.

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To automate this hot-folder synchronization, you need to schedule the sync task to be run by the Windows Task Scheduler every Nth minute. With this kind of schedule, the sync task is run even when no new files are found in the source folder. However, this does not matter, since in that case no transfers or deletions are performed.

This option cannot be used together with Delete extra files on the target or Move source files to archive folder options.

One-way sync, move source files to archive folder after successful transfer

When checked, it moves files on the source after they have been 100% successfully transferred to the archive folder. Files are not moved on the source if they are not 100% fully transferred to the target. You can use date variables in archive folder name to make it easier to identify archives. This feature can be used to create a sync task that will transfer all of the files in the source, and creates a backup copy of the source files on source, like this:

ftp.server.com/OutBox -> C:\InBox

And having Archive folder: /Archive/%TODAY[yyyy-mm-dd]

As an example, the following files are copied to the ftp.server.com/OutBox:

Source ftp.server.com/OutBox	**Target** C:\InBox
/SalesData.zip /Readme.txt /SalesByArea/SalesNY.doc /SalesByArea/SalesCA.doc	

Sync task is run, and here are the results after the sync run:

Source ftp.server.com/OutBox	**Target** C:\InBox
/SalesByArea (empty folder is not deleted)	\SalesData.zip \Readme.txt \SalesByArea\SalesNY.doc \SalesByArea\SalesCA.doc
Source ftp.server.com/Archive/2014-04-15	
/SalesData.zip /Readme.txt /SalesByArea/SalesNY.doc /SalesByArea/SalesCA.doc	

This option cannot be used together with Delete extra files or Delete source files after transfer options.

Notice! Source files are moved to archive folder after transfer, and this move will fail if file with same filename already exists in the archive folder. Therefore it's usually best to use date variables in the archive folder name to create new archive for each transfer. If you run same task multiple times per day, you can add time component to the date variable, like this:

Archive folder name: /Archive/%TODAY[yyyy-mm-dd Hh-Nn-Ss]

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Two-way sync, propagate file/folder deletions on one side to the other side

This option can be used to enable true bi-directional syncs. When enabled, BatchSync tracks the deletions on both sides, and repeats any deletion made on one side on the other side.

Number of threads

BatchSync is multithreaded software. This means that it can make multiple simultaneous connections to the server to transfer multiple files in parallel. This normally greatly increases the speed of transfers and reduces the time needed to run a sync task. Normally 4 to 6 threads give the best performance, but you can experiment with different values to find the optimum setting for your case. The optimum value is dependent on various factors, like network speed, server load, server configuration, network roundtrip latencies, etc.

- In InstantSync, the maximum number of threads is 10.
- In BatchSync, the maximum number of threads is 25 (read note below).

Notice! In BatchSync, the max number of threads is 25. But when running sync task in Task Editor, the number of threads is limited to 10. Therefore, to utilize the maximum number of threads, use the command line SYNC.EXE tool to run sync tasks.

Notice! Some servers do not allow more than one connection from one computer (=single IP address). In that case set this value to 1.

5.17.3 Include-tab

Include filtering by file/folder name

Match case in file/folder name filters

When checked, compares file and folder names in a case sensitive manner. So INDEX.HTML is not considered the same as index.html. When not checked, the filename INDEX.HTML = index.html = Index.Html = InDeX.HtMl

File name matches filter entered below

By default, all files are included in the sync. If you want to select a subset of files, select this check box and enter a list of filenames to be included in the sync. Separate multiple filenames with semicolons (;). You can use wildcard characters in filters, use full, partial, or no path, etc. Read more here.

Folder name matches filter entered below

By default, all folders are included in the sync. If you want to select a subset of folders, select this check box and enter a list of folder names to be included in the sync. Separate multiple folder names with semicolons (;). You can use wildcard characters in the filters, use full, partial, or no path, etc. Read more here.

Include filtering by file size, date & attributes

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All filters in this tab are ANDed together, so in order for a file to be included in the sync, it must match all the filters that are active (=checked). The full formula is

INCLUDE = FILENAME AND SIZE AND DATE AND (FILE ATTRIBUTES ORed together)

File size is

When checked, the file size is compared to this filter value. Enter the size as bytes.

1024 Bytes = 1 Kilobyte (KB)
1048576 Bytes = 1 Megabyte (MB)
1073741824 Bytes = 1 Gigabyte (GB)

File changed

When checked, the file time stamp is compared to this filter value. Use the "day(s) ago" option to enter longer periods of time, like

7 Days = 1 Week
14 Days = 2 Weeks
21 Days = 3 Weeks
30 Days = 4 Weeks or 1 Month
60 Days = 2 Months
90 Days = 3 Months or 1 Quarter
365 Days = 1 Year
730 Days = 2 Years
1095 Days = 3 Years

File date is between

When checked, the file time stamp must be between these two values.

File attributes

When checked, the file's attributes must contain all the selected attributes, but it can also have other extra attributes. So if the Read-Only check box is selected, a file that has Archive and Read-Only attributes set will be included in the sync.

5.17.4 Exclude-tab

Exclude filtering by file/folder name

Match case in file/folder name filters

When checked, compares file and folder names in a case sensitive manner. So INDEX.HTML is not considered the same as index.html. When not checked, the filename INDEX.HTML = index.html = Index.Html = InDeX.HtMl

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File name matches filter entered below

By default, no files are excluded from the sync. If you want to exclude one or more files or folders, select this check box and enter a list of filenames to be excluded from the sync. Separate multiple filenames with semicolons (;). You can use wildcard characters in the filters, use full, partial, or no path, etc. Read more here.

Folder name matches filter entered below

By default, no folders are excluded from the sync. If you want to exclude one or more folders, select this check box and enter a list of folder names to be excluded from the sync. Separate multiple folder names with semicolons (;). You can use wildcard characters in the filters, use full, partial, or no path, etc. Read more here.

Exclude filtering by file size, date & attributes

All filters in this tab are ANDed together, so in order for a file to be excluded from the sync, it must match all the filters that are active (=checked). The full formula is

EXCLUDE = FILENAME AND SIZE AND DATE AND (FILE ATTRIBUTES ORed together)

File size is

When checked, the file size is compared to this filter value. Enter the size as bytes.

1024 Bytes = 1 Kilobyte (KB)
1048576 Bytes = 1 Megabyte (MB)
1073741824 Bytes = 1 Gigabyte (GB)

File changed

When checked, the file time stamp is compared to this filter value. Use the "day(s) ago" option to enter longer periods of time, like

7 Days = 1 Week
14 Days = 2 Weeks
21 Days = 3 Weeks
30 Days = 4 Weeks or 1 Month
60 Days = 2 Months
90 Days = 3 Months or 1 Quarter
365 Days = 1 Year
730 Days = 2 Years
1095 Days = 3 Years

File date is between

When checked, the file time stamp must be between these two values.

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File attributes

When checked, the file's attributes must contain all the selected attributes, but it can also have other extra attributes. So if the Read-Only check box is selected, a file that has the Archive and Read-Only attributes set will be included in the sync.

5.17.5 Comparison-tab

Use SyncDB

SyncDB is a special tracking file that records the file size and date for all files in the sync. On the next run, this recorded info is compared to the present size and date values. If the values are different, then a file has changed since the last sync and will be transferred. Read more here.

Only reset SyncDB file on the next sync run, do not transfer any files

When running a sync **first time** between two folders where folders are already in sync, possibly all files are flagged for transfer. This is because file sizes and/or dates are different in the source and target, and there is no SyncDB yet available to assist in the file comparison. This is a problem if there are gigabytes of data to transfer.

When this option is checked, software rebuilds the SyncDB tracking file by scanning through all files on source and target. All files found on both sides are considered being in sync, and are not transferred after this reset. This reset sets a starting point for tracking changes to the files, and only changes occurring after this reset will be considered for transfer. This check box clears itself automatically after building the SyncDB tracking file.

Rules if file is not in SyncDB

These rules are used if the SyncDB feature is disabled, when running a sync for the first time or when a file cannot be found in SyncDB, i.e. if a file is new. If you disable SyncDB, then these rules are always used when running the sync task.

Rules for one-way sync

Compare dates. Transfer if source date is newer/the same/older/different than target

When checked, compares the date/time of the source and target files. The default is newer, which means that if the source file is newer than the target the file is transferred.

Compare sizes. Transfer if source size is smaller/the same/bigger/different than target

When checked, compares the size of the source and target files. By default it is not checked, so file sizes are not compared.

Time Comparison

These extra rules are used to compare file and folder time stamps.

Consider time to be equal when there is a max NN secs difference

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When dealing with files in network shared folders, file dates can be different by 2 secs even when the files are exactly the same. So a date stamp is not perfectly accurate in all situations. Therefore, it is suggested that this value be set to 2, so that files with a max 2 second difference in time stamp are still considered to have the same date stamp.

Server does not report seconds in time stamp, so ignore seconds

The majority of the FTP and SFTP servers in use worldwide do not include seconds in file time stamps. Therefore, it's recommended to check this option to compare file times without seconds.

Ignore Daylight Saving Time exact 1 hour difference in file times

All file time stamps change by a 1 hour offset when a computer switches to/from Daylight Saving Time (DST). This option ignores this exact 3600 second difference in file time stamps.

Notice! If you want to always copy all files, making the task a copy task, instead of a sync task, you can do the following:

1. Disable the SyncDB feature
2. Uncheck the Compare dates check box
3. Uncheck the Compare sizes check box

Now when the sync is run, no file dates or sizes are compared, so the files are always transferred. This means that even when an identical file already exists on the target, the source file is still transferred.

5.17.6 Conflicts-tab

A conflict occurs when both the source and target files have changed since the last sync run. This raises a problem, as overwriting either of the files will result in the changes made to it disappearing. In general, this should never happen. Better still, the file work flow, the folder structure, and the sync tasks should be designed to ensure that this never happens. The settings on this tab help you to log conflict situations. This provides you with a good tool to help in figuring out how to prevent conflicts from happening in the future.

The handling of conflicts requires that BatchSync can detect the conflicts. To properly detect conflicts, SyncDB must be enabled (see Comparison-tab), as the SyncDB file stores the state of each file after every sync run.

Conflicts in one-way syncs

Conflicts in a one-way sync occur when the software detects that the source file has changed, but also that the target file has changed. If we "Always transfer source file to target", we potentially overwrite the changes made to the target file. But if your sync scenario is set up so that changes should only occur to source files, and never to target files, then it's safe to overwrite any possible changes in the target.

If conflict occurs, perform action specified above and write line to the error log

When checked, an error message is written to the error log stating the name of the folder and of the

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conflicting file.

Conflicts in two-way syncs

Conflicts in two-way syncs occur when the software detects that a file exists on both the source and target, and that both files have changed since the last sync. If the "Transfer newer file" option is selected, it overwrites the changes made to the older file. If you want to ensure that no changes are ever overwritten, select the "Skip file" option. But this then means that folders are not in sync after the task is run (=all files are NOT identical).

If conflict occurs, perform action specified above and write line to the error log

When checked, an error message is written to the error log stating the name of the folder and of the conflicting file.

Locked files

Locked files are files that are currently open and in use by some other program or by operating system. Therefore they cannot be opened and uploaded. With this setting you can control how locked files are handled.

Report locked files as an error

Software tries to upload a file, and if it is locked, it will flag this file having an error. You will see the task run in the history pane with ERROR flagging.

Do not report locked files as an error, just skip them

Software tries to upload a file, and if it is locked, it will not flag this file with an error, but instead, it will skip it and write a warning message to the transfer log. You will see the task run in the history pane with OK flagging.

NOTE! Both options will try to open locked file as many times as specified in *Edit Task* > *Edit Server* > *Timeouts* > *Retry count max* -value. And it will have *Edit Task* > *Edit Server* > *Timeouts* > *Transfer retry delay (secs)* between each retry.

Read-only and hidden files

When checked, BatchSync will reset read-only and hidden file attributes to allow file to be downloaded. Otherwise file download will result in an error to be generated.

5.17.7 Logs-tab

BatchSync tasks are often run unattended by the Windows Task Scheduler. Therefore, it's often necessary to be able to track which files were transferred, in what direction, and what errors, if any, occurred during the sync runs. The settings on this tab control what log files are written during the sync runs.

Notice: BatchSync always updates the global run history log file, which contains run info and statistics

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about all of the sync tasks that were run on this computer. You can view this history log by clicking the History button on the left hand side of the main window.

More information about log files can be found here.

Write log files to folder:

The folder where all log files are written. Sometimes it is most convenient to create separate subfolders for the log files for each task, and sometimes it is more appropriate to write them all to the same folder.

Enable transfer logging

When checked, a transfer log is created. This log file contains a list of all the files transferred, and any errors that occurred during the transfer.

Filename

Filename for the transfer log without the path. This filename can contain macros. Read more here.

Max size (KB)

If "Rotate w/ Max Size" is selected, a log file is renamed to Filename.bak.log and a new log file is created when the file size reaches this limit. So Filename.log contains the most recent log entries, and Filename.bak.log contains older info.

Enable FTP cmd logging

The FTP cmd log contains FTP protocol commands sent to the server by BatchSync and responses from the FTP server. This log is mostly needed when troubleshooting the sync tasks.

Enable error logging

The error log contains all file transfer warnings and errors. If no warnings or errors occur during the sync run, then this file is not created. In other words, if this file is created, then there are one or more warnings/error messages in the file.

5.17.8 Email-tab

Notice! Email notifications are ONLY available in the BatchSync product. It is not possible to send email notifications with InstantSync.

BatchSync can send an email notification after a sync run completes. In order to receive notifications, you must enter the proper values in these fields. If you cannot remember the correct values for an SMTP server, take a look at the settings for your email client (Outlook, Thunderbird, Eudora etc.). The proper values for the SMTP server can be found there.

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You can also use SMTP server of many free email providers, like Gmail and Yahoo, for sending emails.

In cases where sync tasks are run unattended as scheduled, it is often necessary to be notified if a sync task fails. You can get this kind of notification by enabling the "Send email after sync run completes with errors" option.

Send email after successfully completed sync run: Always

BatchSync sends a "Sync OK" email message after a sync completes with no errors. This email message contains task statistics, like the number of files transferred, the time taken, and the average transfer speed. You can modify the email subject and content with the options described below. An email is sent whether files were transferred or not.

Send email after successfully completed sync run: Only if files were transferred

The same as above, but an email is sent only if one or more files were transferred.

Send email after sync run completes with errors

BatchSync sends a "Sync Errors" email message after a sync completes with errors. The email message contains task statistics, like the number of files transferred, the time taken, and the average transfer speed.

SMTP Host address

Enter the SMTP server name or IP address. E.g. "smtp.my_isp.com" or "smtp.gmail.com"

SMTP Port

Enter the SMTP server port for connection. Default values are:

- Connection security: None, default port: 25
- Connection security: SSL, default port: 465
- Connection security: STARTTLS, default port: 587

Timeout

Time in seconds BatchSync tries to send an email before giving up. The default value is 15 seconds. You can disable timeout by setting this value to 0. BatchSync will then wait forever, so this value is not really recommended. Instead, use a larger timeout if the server is very heavily loaded, like 600 seconds.

Use authentication

Enable this if your SMTP server requires authentication (ESMTP).

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Login username and password

SMTP login username and password, only needed when a server requires authentication.

Connection security:

- Connection security: None, email messages are sent as plain text, without any encryption
- Connection security: SSL, (sometimes called SSL/TLS), communication with SMTP server is encrypted
- Connection security: STARTTLS, communication with SMTP server is encrypted

Please consult your network admin for correct option. If you know what SMTP port is used for sending emails, this will hint what security settings should be selected. If port 25 is used, select None. If port 465 is used, select SSL. If port 587 is used, select STARTTLS.

For example with Gmail, you can send email with two different sets of settings:

- SMTP host address: smtp.gmail.com, Port: 465, Connection security: SSL
- SMTP host address: smtp.gmail.com, Port: 587, Connection security: STARTTLS

In order to use Gmail as your SMTP server, you need to check Use authentication check box, and enter your google account username and password.

From email address

Enter valid email address. This appears in the sender field of the email message that you receive. You can add the display name "Sync Task" like this:

`Sync Task <your.email@company.com>`

where `Sync Task` is shown as the sender in your email client (Outlook, Thunderbird, etc.) instead of the actual email address.

To email address

The notification email is sent to this email address. You can enter multiple addresses by separating them with commas. Examples:

you@company.com
netadmin@yourcompany.net
me@here.com, you@there.org, him@elsewhere.net

Subject

This field is used as an email subject-line. You can use the following variables to create a subject-line that best fits your needs:

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Variable	Description
%STAT_TASK_FILENAME	Sync task filename without path, like "Backup.stf"
%STAT_TASK_FILENAME_WITHPATH	Sync task filename with full path, like "C:\tasks\Backup.stf"
%STAT_STATUS	Sync status "OK" or "Errors"
%STAT_STATUS_MSG	Sync status "Sync OK" or Sync Errors"
%STAT_NO_ACTION	Number of files or folder with no action, they were already in sync, like "123"
%STAT_ERRORS	Number of errors, like error connecting, transferring, creating a folder, etc.
%STAT_FILES_TRANSFERRED	Number of files transferred, like "123"
%STAT_FILES_DELETED	Number of files deleted, like "123"
%STAT_FOLDERS_CREATED	Number of folders created, like "123"
%STAT_FOLDERS_DELETED	Number of folders deleted, like "123"
%STAT_ALL_OPERATIONS	Total number of all operations, like "123"
%STAT_TRANSFER_TIME	File transfer time (not including the time taken by sync preview), like "35 secs"
%STAT_TOTAL_TIME	Total sync run time, like "59 secs"
%STAT_BYTES_TRANSFERRED	Total number of bytes transferred, like "2.57 MB (2697819 bytes)"
%STAT_AVG_SPEED	Average transfer speed, like "756.4 KB/s"
%STAT_AVG_BANDWIDTH	Average bandwidth usage, like "5807.5 Kbps"
%STAT_VERIFY_RESULT	Verification-tab results: "Transfer results OK", "ERROR:..."
%STAT_LIST_OF_FILES	List of all files transferred, and list of all files with error message.

The default subject line is:

```
%STAT_STATUS_MSG - %STAT_TASK_FILENAME - %STAT_FILES_TRANSFERRED files transferred
```

and this results in email subjects like this:

```
Sync OK - UploadWebServer.stf - 18 files transferred
Sync OK - Backup NY Server - 5214 files transferred
Sync Errors - Logfile Download.stf - 0 files transferred
```

For example, if you are only running a single sync task, you could change this field to:

```
Transfer %STAT_STATUS, %STAT_FILES_TRANSFERRED files of total %STAT_BYTES_TRANSFERRED
in %STAT_TOTAL_TIME
```

and this would result in an email subject like this:

```
Transfer OK, 552 files of total 2.57 MB (2697819 bytes) in 59 secs
```

Send text/html email

BatchSync uses email template files for text and html notification email messages. These are text files that can be edited with any text editor, like Notepad. Email templates are by default installed to:

- C:\ProgramData\Sync\Email Templates\text_email.txt
- C:\ProgramData\Sync\Email Templates\html_email.txt

These email templates utilizes same variables as listed above, under Subject heading. Emails are sent as html mail by default, but if you prefer, you can choose to send them as text only.

You can see a sample of a notification email message below (html formatted email).

Include a list of files transferred in the email message

When checked, a list of all of the file and folder actions are included in the email message body, replacing %STAT_LIST_OF_FILES variable. Below is a sample of an email message. The grayed text is part of the email message body that is always included. And the rest of it is a "list of files transferred" that is included only if this option is checked.

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Sync OK

email test.stf - 753 files (30,33 MB) transferred.

STATISTICS	
Status	Sync OK
Errors	0
Files transferred	753
Files deleted	0
Folders created	0
Folders deleted	0
No action	64
Operations total	753

SPEED & TIMINGS	
Run date	1.4.2014 15:40:28
Total time	36 secs
Transfer time	14 secs
Average transfer speed	2 219,6 KB/s
Average transfer bandwidth	19976,7 Kbps
Total bytes transferred	30,33 MB (31804819 bytes)

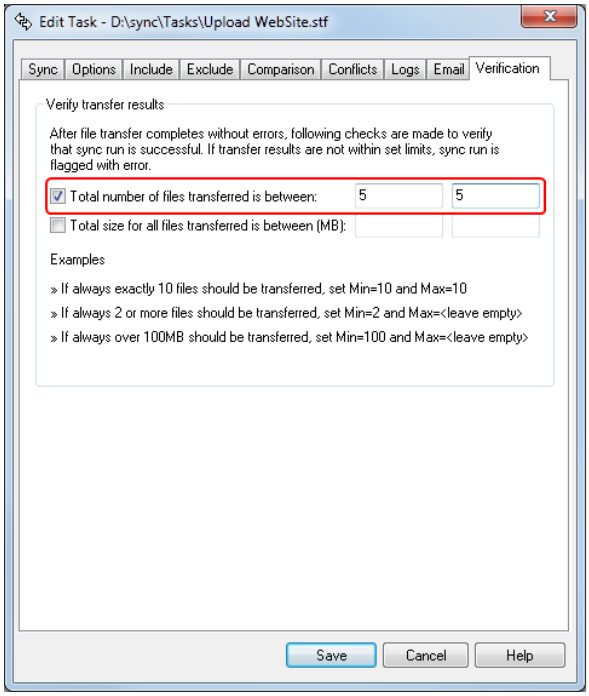
SYNC TASK	
Task file	D:\sync\Tasks\email test.stf
Description	Email sending test and demonstration sync task
Source:	localhost/Upload/apache
Target:	C:\temp
Verification:	(not enabled)

Transferred 12,9 KB /Upload/apache/ABOUT_APACHE -> C:\temp\ABOUT_APACHE
Transferred 2,9 KB /Upload/apache/Announcement -> C:\temp\Announcement
Transferred 20,0 KB /Upload/apache/Apache.exe -> C:\temp\Apache.exe
Transferred 292 KB /Upload/apache/ApacheCore.dll -> C:\temp\ApacheCore.dll
Transferred 216 bytes /Upload/apache/back.gif -> C:\temp\back.gif
Transferred 0 bytes /Upload/apache/bigfile.ext0 -> C:\temp\bigfile.ext0
Transferred 152 bytes /Upload/apache/blank.gif -> C:\temp\blank.gif
Transferred 2,3 KB /Upload/apache/boxshot75.gif -> C:\temp\boxshot75.gif
Transferred 22,7 KB /Upload/apache/content-negotiation.html -> C:\temp\content-negotiation.html

5.17.9 Verification-tab

After file transfer completes successfully, BatchSync checks that transfer results are within set limits. These checks are not made if sync run has other errors.

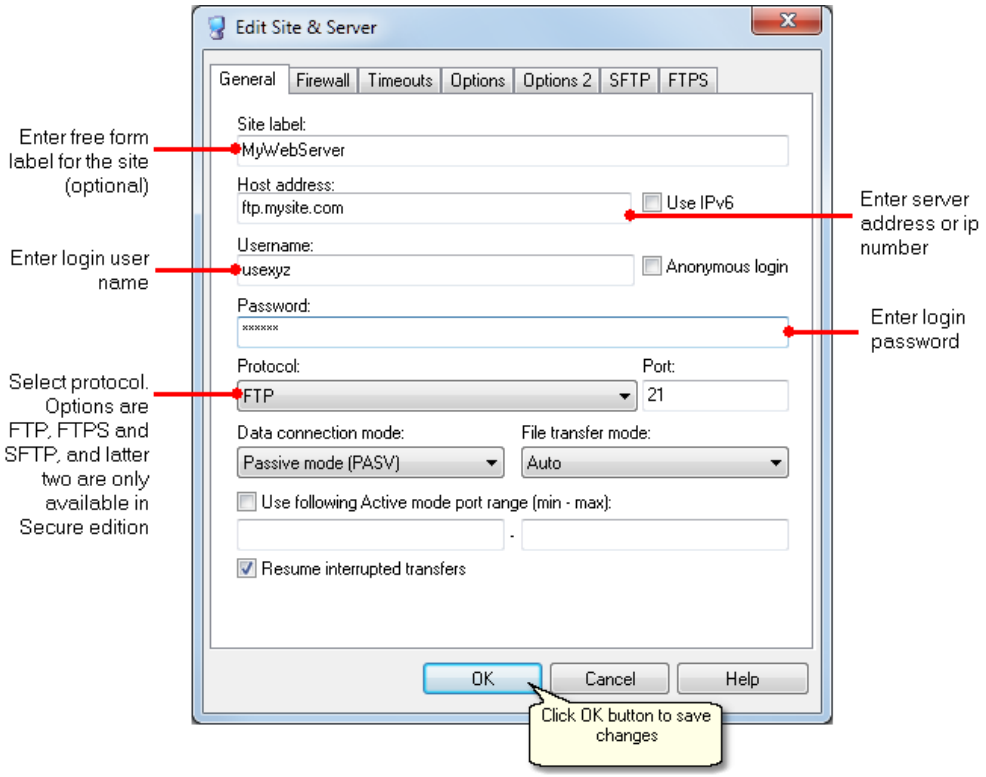
For example, your scheduled nightly file upload should always transfer exactly 5 files. To verify that those 5 files are actually successfully uploaded, set up verification like this:


Edit Task - D:\sync\Tasks\Upload WebSite.stf
Sync
Options
Include
Exclude
Comparison
Conflicts
Logs
Email
Verification
Verify transfer results
After file transfer completes without errors, following checks are made to verify that sync run is successful. If transfer results are not within set limits, sync run is flagged with error.
Total number of files transferred is between:
5
5
Total size for all files transferred is between (MB):
Examples
» If always exactly 10 files should be transferred, set Min=10 and Max=10
» If always 2 or more files should be transferred, set Min=2 and Max=<leave empty>
» If always over 100MB should be transferred, set Min=100 and Max=<leave empty>
Save
Cancel
Help

If anything but 5 files are transferred, sync task is flagged with an error, even though there were no actual transfer errors in the sync run. This will trigger the automatic email notification to be sent, if Send email after sync run completed with errors is enabled in Email-tab.

5.18 Edit Server-window

5.18.1 General-tab



The Edit Server window fields

Required fields are marked with an *

Site label

Free form label for the site, used only for display purposes. E.g. "Web server" or "Company backup server"

Host name or address *

The server address as a name or IP number. When setting up a web site on a web hosting company's server, you get this address from them. E.g. "ftp.myserver.com" or "82.108.11.151"

Do not enter prefixes like ftp:// or http://

If Use IPv6 is enabled, you can use IPv6 addresses like "fe80::9981:9452:fea5:bf7c", or host name that translates to IPv6 address.

Use IPv6

When checked, BatchSync makes connection over IPv6. NOTE! Your internet connection and server must be IPv6 enabled in order to utilize this feature.

Username *

Login username. When setting up a web site on a web hosting company's server, you get a username from them. E.g. "80usr5223" or "johndoe"

Password *

Login password. When setting up a web site on the web hosting company's server, you get this password from them. E.g. "secret" or "5tzP7aK3"

For SFTP protocol you can also use Public Key Authentication for logins. Click SFTP-tab to enable this setting.

Anonymous Login

When checked, the username "anonymous" and the password "user@comp.com" are used to login to the server.

Protocol

The following protocols are supported:

- **FTP**. File Transfer Protocol. The default and most widely used protocol. Default port is 21.
- **FTPS with SSL (explicit with data)**. Same as FTP but uses SSL encryption (AUTH TLS) for both command and data transfer connections. Default port is 21.
- **FTPS with SSL (explicit without data)**. Same as FTP but uses SSL encryption (AUTH TLS) for command connection only (secures login username and password, but not files transferred). So the data channel is **not** encrypted. Default port is 21.
- **FTPS with SSL (implicit with data)**. Same as FTP but uses SSL encryption for both command and data transfer connections. Default port is 990.
- **SFTP using SSH2**. Totally different protocol from FTP. Makes connection using SSH protocol and uses SFTP (Secure File Transfer Protocol) to transfer files. SSH1 servers are not supported, only SSH2 servers. Default port is 22.

NOTE! All FTP servers **do not** support FTPS connections. In order to utilize encrypted transfers, the server must be explicitly set up to support encrypted connections. And most FTP servers **are not** set up that way. If your server is owned by a web hosting company, please consult them for the different options available to you.

Notice! The support for FTPS and SFTP servers requires the Secure edition.

FTP/SSL Protocol - Implicit and explicit modes

In the implicit mode, the server is set up to listen to a specific port (most often 990), and it accepts only SSL secured connections. This mode is not formally adopted in an RFC, but it is widely supported. Both command and data channels are automatically secured.

In the explicit mode, the server is usually set up to use port 21, and the server can be configured to accept both secure (FTPS) and non-secure (FTP) connections. BatchSync initiates a secure connection with the AUTH TLS command. This mode is formally adopted by an RFC, so for strict compliance to standards, use the explicit method.

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Notice! The server configuration determines what modes can be used. So if a server is configured to support only FTPS implicit on port 990, then you cannot use anything else. Similarly, if a server only supports FTPS explicit on port 21, then you must select that option. There is no automation or intelligence in selecting the proper mode, but as the user you need to know what modes the server uses and supports. So please consult your server administrator for help in selecting the correct mode and port to use.

Data connection mode

- Passive mode (PASV). Data connection is made from BatchSync to the server. Better option when dealing with firewalls.
- Active mode (PORT). BatchSync waits for data connection to be made from the server to BatchSync. Almost always blocked by firewalls.

Nowadays, firewalls are everywhere, and they usually block connections from the internet to a computer behind a firewall. Therefore PORT mode does not work well in this kind of environment. Some servers are set up so that they only support PORT mode. Or they only support PASSIVE mode. A majority of them support either.

There is no performance penalty or any other difference when choosing one mode over the other. So select the mode that works; most often passive mode works better.

Use following Active mode port range (min-max)

Defines port range in use when Data connection mode: Active mode (PORT) is selected. Most often you need to set port range to allow FTP/S traffic pass through your firewall (you also need to configure your firewall to allow inbound traffic for this port range). Enter minimum and maximum port numbers for data connection. These port numbers are not used when Passive mode (PASV) is selected.

File transfer mode

The FTP protocol supports two different modes to transfers files: ASCII and Binary. The ASCII mode makes automatic translations to text files and is the most appropriate mode to transfer text files, like html, text, and log files. The Binary mode transfers files as-is, without any changes. This is for binary files like executables, pictures, databases, etc. Now you might think, why not send everything as binary, since then files are not altered at all during the transfer?

The reason for not doing this is that many web servers do not work correctly if, for example, HTML files are uploaded in binary mode. This is why they must be transferred using ASCII mode. BatchSync supports Auto-mode, where the transfer mode of the file is determined by its filename extension. The list of extensions that are transferred in ASCII mode is editable in global settings via the Tools > Options > Files transferred in ASCII mode-field. Most often it's best to leave this setting on Auto.

If you are transferring files to a server that is running Windows, then no ASCII mode changes are necessary, so you can select Binary-mode. Also some web servers work fine if html files are transferred in binary mode. But it does no harm to transfer these files using Auto-mode. So all in all, use Auto-mode if you do not have a good reason not to use it.

Resume interrupted transfers

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The FTP protocol supports a Resume-feature to continue the file transfer in case of failure. For example, when the connection is dropped in the middle of a big file transfer, BatchSync can reconnect and continue (i.e. resume) the transfer from the exact position of the failure. The only drawback is that not all FTP servers support this feature.

When this check box is selected, BatchSync tries to resume the transfer, and if this fails, it starts from the beginning of the file. If unselected, the transfer is always restarted from the beginning of the file.

5.18.2 Firewall-tab

Most firewalls offer transparent connections, so even when making connections through a firewall, the user does not need to create any special settings for it. In these cases, you do not need to set any firewall related options in BatchSync. If your firewall requires special treatment, then the following firewall types are supported:

- Settings from Internet Explorer. If firewall settings are defined for Internet Explorer, then BatchSync can use those settings. Then no other settings are required. Settings in Internet Explorer are found under Tools->Internet Options->Connections->LAN Settings. BatchSync will use anything specified for "Socks", or for "FTP" if socks isn't specified.
- USER user@site. Connect by sending username and site to connect to in USER command.
- SITE site. Issue separate SITE command when connecting.
- OPEN site. Issue separate OPEN command when connecting.
- Simple relay. Connects to predefined site using simple relay.
- Web CONNECT. Typical WEB proxy (using web CONNECT command) is used.
- Socks 4. Connect using Socks4 proxy. No username or password is required.
- Socks 4a. Connect using Socks4a proxy. No username or password is required.
- Socks 5. Connect using Socks5 proxy. Requires username or password.

5.18.3 Timeouts-tab

All timeout and delay values are in seconds.

Connect timeout

Time to wait for connect to succeed before retrying connect.

Connect retry delay

Wait time between connect attempts.

Command timeout

Time to wait for response to command sent to server before retrying the command.

Transfer timeout

Max idle time (=no data is transferred) during the file transfer before trying to restart the transfer.

Transfer retry delay

When there is an error or timeout during the transfer, software waits this time in secs before attempting

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to connect and transfer again.

Retry count max

Each file transfer is retried this many times before file is flagged with an error. Set this to 999 to retry forever, but notice that then the task will be in a loop forever if, for example, the server does not respond. So it is better to set this value to < 10 as transfer will normally succeed with 10 tries, and if it does not, there are some real problems that need to be worked out.

Max errors per task

Sets the max limit for total number of errors per task run. When number of items with errors exceeds this this limit, all remaining items in the transfer queue are flagged with the error and task is terminated. You can set this to 9999 to disable this feature.

For example, lets say your sync task is about to upload 100 files, and you have Max errors per task: 20. About 30 of these files are locked, so they cannot be uploaded. This is what will happen:

- BatchSync tries to upload each file. If file is locked and cannot be uploaded, task total error count is incremented.
- If total error count is < Max, then next item is uploaded
- When total error count reaches limit of 20, software does not even try to upload remaining files, but they are flagged with error message ""Max errors per task - limit exceeded (error code -1101)"

Why this settings is needed in the first place, you might ask. The answer is that if there is for example 100.000 files in the transfer queue, and server stops responding, it would take forever to try to transfer each of 100.000 files. So instead, software gives up after Max-errors.

5.18.4 Options-tab

Server type

The default value "Auto detect" works in the vast majority of cases. If you have problems when running a sync, and filenames are not shown correctly, select the server type from the list.

List command

BatchSync sends this command to the server to request a directory listing. The beginning of the command must always be "LIST", but you can add parameters to this command. For instance, many unix servers do not include hidden files in a bare "LIST" command. You can set it to "LIST -aL" to command the server to resolve links and include hidden files. But note, list commands are server specific, so not all servers support the same set of parameters for the LIST command.

Server time zone

If the server is running on a different time zone (like is usually the case when using web hosting companies), select the appropriate time zone from this drop down list. In this way, directory listings, and the file time stamps within them, are converted to the local time automatically.

Multiple network card settings

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Some computers are fitted with multiple network cards (NICs). In the typical scenario, one of them is connected to the company's internal network or intranet, and the other is connected to the public Internet. In this case, you can force software to use a specific NIC for connections. To do this, select the **Enter local IP address manually** option and enter the IP address for this NIC. Now, all of the connections are forwarded using the specified NIC and IP address.

UTF-8 unicode character support

UTF-8 encoding adds support for many European language foreign characters in file and folder names. When checked, the software automatically detects if a server is sending encoded filenames. Thus, in most cases, you can leave this field checked. But if filenames do not appear correctly in the Sync window, it might be that the server is not reporting its UTF-8 support correctly, and you need to deselect this option.

5.18.5 Options 2-tab

Timestamp - Set local file timestamp after downloading

After downloading a file, the software sets the file modification date and time to the same values as those for the server.

Timestamp - Set remote file timestamp after uploading

After uploading a file, the software sets the file modification date and time to the same values as those for the local file.

NOTE! All servers do not support the MDTM or MFMT commands that the software uses to set remote file dates. In these cases, the file date is left at the server set value. This usually does not cause any problems, and sync runs work correctly, due to the SyncDB feature. But in those cases, the remote file date is not the same as the local one.

The combo box below this field is for servers that do not work in the standard way, and require the file date to be sent as local time. You will see the need for this setting if remote file dates are off by one or two hours, but the minutes and seconds are correct. This problem is related to some older FTP servers; the newer ones do not usually need this special handling.

Compression

The software uses data compression automatically, if it is supported by the server. The default value "Level 6" is a good compromise between compression efficiency and required computing power. In some special cases, like when running a sync using the SFTP protocol on a fast network, you might want to turn compression off, because compression requires a lot of computing power and might consume too many CPU cycles (on both the client and server sides). Therefore, if you see that the CPU is peaking when running the sync, you might try to turn compression off.

Buffer Size

By default, BatchSync uses a buffer size that is the same as the Windows network stack buffer size.

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This usually gives you the optimum file transfer performance. In some cases, like with some ATM networks or certain servers, you can get better performance by specifying the buffer size here. Enter the buffer size in kilobytes, in the range of 1 to 1024. The maximum value 1024 means 1024 kB.

You can find optimum value for Buffer Size setting with Task Optimizer.

5.18.6 SFTP-tab

Authentication method for SFTP logins

Password: Username and password are used to authenticate the user (see General-tab).

Public key: In this method, the username and public/private key pair is used to authenticate the user, instead of a username + password. When public key authentication is used, the password is not needed or used, so you can leave password field empty.

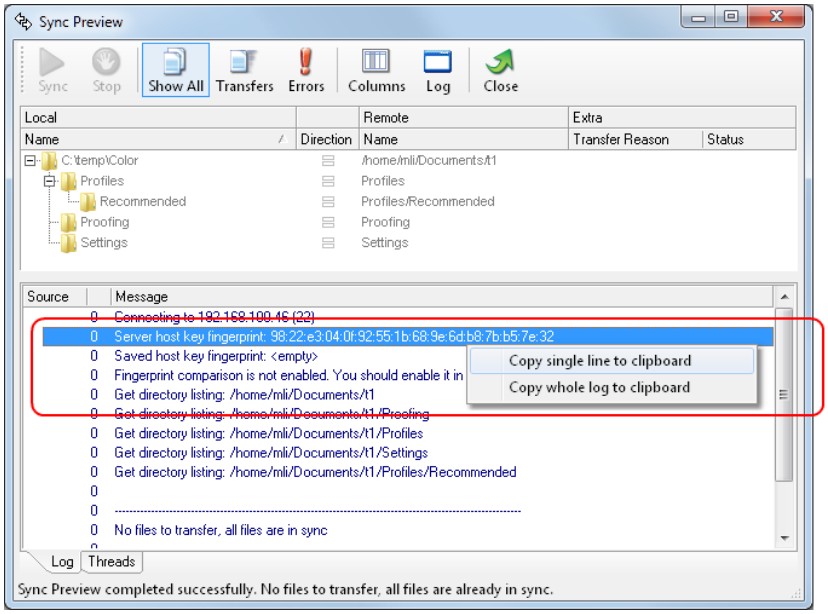
Read more about public key authentication here.

Host key fingerprint

When making a connection to SSH server, server sends "host key fingerprint" to identify the server to a client. With this setting you tell BatchSync to compare received fingerprint to saved one, and accept connections only to the certain verified server. If fingerprint does not match, BatchSync will abort the connection, and sync task is flagged with error.

To set up host key fingerprint verification, do as follows:

1. Run Sync Preview
2. Scroll Sync Preview window log pane to the top
3. Locate Server host key fingerprint line in the log, and right-click on it to open popup menu. Select Copy single line to clipboard from the menu:



4. Close Sync Preview window, and select Edit Task > Edit Server > SFTP-tab > Host key fingerprint

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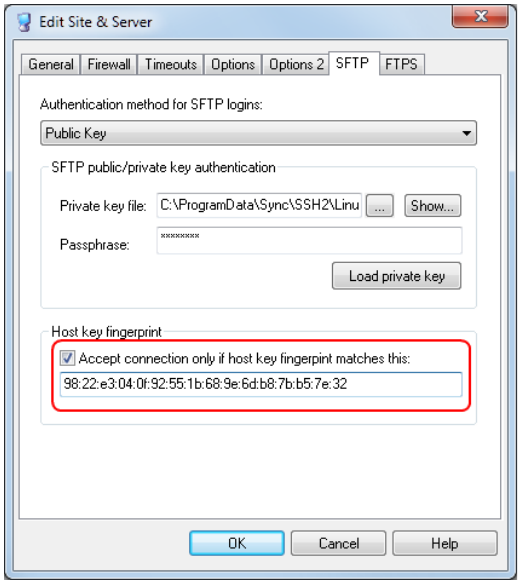
field, and paste fingerprint from the clipboard to the text field.

5. Check Accept connection only if host key fingerprint maches checkbox:



6. Save changes. Now you can test this setting by running Sync Preview again. Log pane looks like this:

```
Connecting to 192.168.100.46 (22)
Server host key fingerprint: 98:22:e3:04:0f:92:55:1b:68:9e:6d:b8:7b:b5:7e:32
Saved host key fingerprint: 98:22:e3:04:0f:92:55:1b:68:9e:6d:b8:7b:b5:7e:32
Fingerprint comparison OK
```

About host key fingerprint changes

The fingerprint is based on the Host's Public key, usually based on "/etc/ssh/ssh_host_rsa_key.pub". If the fingerprint changes, the machine you are connecting to has changed their public key. This may not be a bad thing (happens for example when re-installing ssh), but it could also indicate that you are connecting to a different machine at the same domain/IP (happens when you are connecting through something like load balancer) or that you are being targeted with a man-in-the-middle attack, where the attacker is intercepting/rerouting your ssh connection to connect to a different host which could be snooping your data.

So if you get warned of a changed fingerprint, we cautious and double check that your actually connecting to the correct host over a secure connection. Though most of the time this is harmless, it can be an indication of an issue.

5.18.7 FTPS-tab

SSL Certificate Validation

When BatchSync (client) makes a connection to the FTPS server, server sends its certificate to the

client. This SSL certificate is used to encrypt all data transferred between client and server, and it also identifies the server.

When these certificates are signed by a trusted certificate authority, this provides assurance that the client is connected to the requested server, avoiding a man-in-the-middle attack. If the certificate is not signed by a trusted CA (called a self-signed certificate), the client cannot be sure about servers identity. Following options control how BatchSync behaves when processing received server certificate.

It should be noted, that regardless what kind of certificate is presented to the client, FTPS connections are always encrypted. So the level of encryption is not affected by status of the certificate (whether it's signed by CA, self-signed, revoked etc.).

Accept any certificate, but display a warning

When this option is selected, BatchSync accepts any certificate, but displays a warning message when running a sync. The certificate can be signed by CA, or self-signed, or expired, or revoked etc. This option should NEVER be used in production.

Accept only certificate if its...

Server can be identified by a certificate checksum, called SHA1- or MD5-fingerprint. This fingerpring is calculated from the private key of the servers SSL certificate. The fingerprint cannot be altered or manufactured, and it is unique, so no two certificates can have same fingerprint. By comparing the known (saved) fingerprint to the received fingerprint, you can be sure that you are connecting to the same server as you did previously. This prevents main-in-the-middle attacks. The certificate itself can be CA- or self-signed. This option can be used in production environment, if CA signed certificate cannot be used.

To set up fingerprint comparison, do as follows:

1. Run Sync Preview (with task that connects using FTPS protocol)
2. Scroll Sync Preview window log pane to the top
3. Locate SHA1 fingerprint line in the log, and right-click on it to open popup menu. Select Copy single line to clipboard from the menu:

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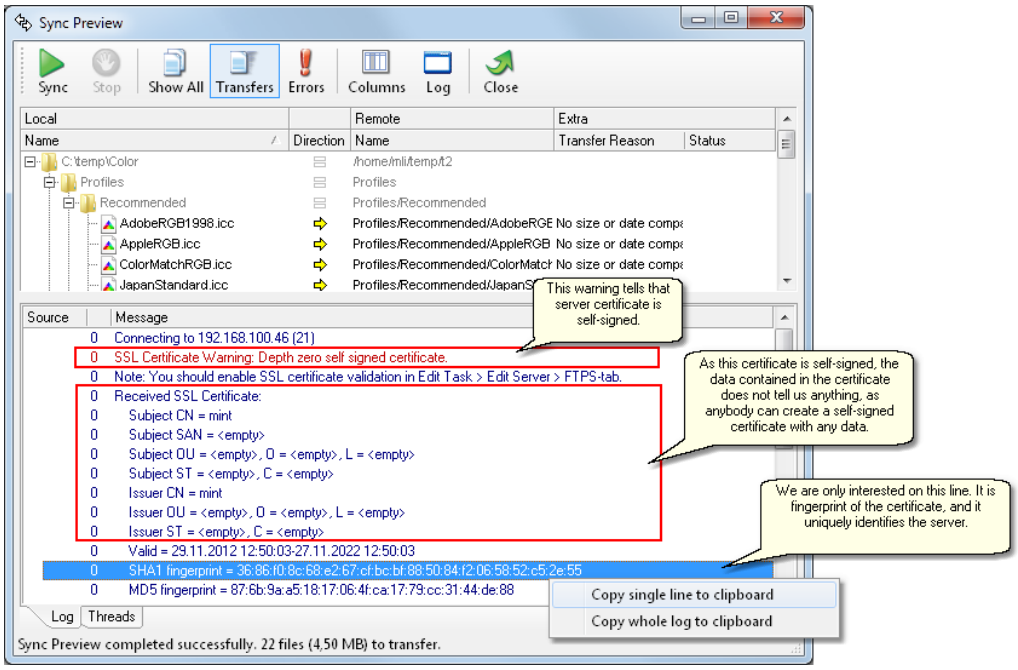
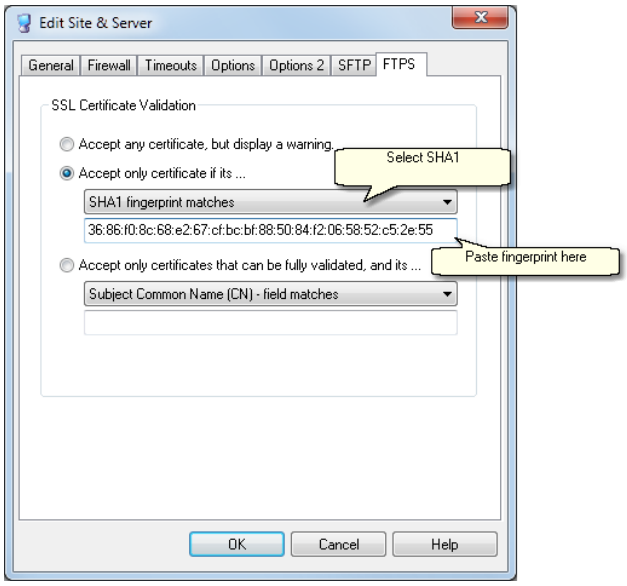

Sync Preview
Sync
Stop
Show All
Transfers
Errors
Columns
Log
Close
Local
Remote
Extra
Name
Direction
Name
Transfer Reason
Status
C:\temp\Color
/home/mli/temp/t2
Profiles
Profiles
Recommended
Profiles/Recommended
AdobeRGB1998.icc
AppleRGB.icc
ColorMatchRGB.icc
JapanStandard.icc
Profiles/Recommended/AdobeRGE No size or date compa
Profiles/Recommended/AppleRGB No size or date compa
Profiles/Recommended/ColorMatcl No size or date compa
Profiles/Recommended/JapanS
This warning tells that server certificate is self-signed.
Source
Message
0 Connecting to 192.168.100.46 (21)
0 SSL Certificate Warning: Depth zero self signed certificate.
0 Note: You should enable SSL certificate validation in Edit Task > Edit Server > FTPS-tab.
0 Received SSL Certificate:
0 Subject CN = mint
0 Subject SAN = <empty>
0 Subject OU = <empty>, O = <empty>, L = <empty>
0 Subject ST = <empty>, C = <empty>
0 Issuer CN = mint
0 Issuer OU = <empty>, O = <empty>, L = <empty>
0 Issuer ST = <empty>, C = <empty>
0 Valid = 29.11.2012 12:50:03-27.11.2022 12:50:03
0 SHA1 fingerprint = 36:86:f0:8c:68:e2:67:cf:bc:bf:88:50:84:f2:06:58:52:c5:2e:55
0 MD5 fingerprint = 87:6b:9a:a5:18:17:06:4f:ca:17:79:cc:31:44:de:88
As this certificate is self-signed, the data contained in the certificate does not tell us anything, as anybody can create a self-signed certificate with any data.
We are only interested on this line. It is fingerprint of the certificate, and it uniquely identifies the server.
Copy single line to clipboard
Copy whole log to clipboard
Log
Threads
Sync Preview completed successfully. 22 files (4,50 MB) to transfer.

4. Close sync preview, and select Edit Task > Edit Server > FTPS-tab, and paste fingerprint to Accept only certificate it its SHA1 fingerprint matches text field:



5. Save changes. Now each time BatchSync connects to the server, it compares the received fingerprint to saved one, and aborts connection with error if fingerprints do not match.

Accept only certificates that can be fully validated

CA signed certificate is the best way to secure FTPS data transfers. When this option is selected, BatchSync validates the certificate and chain of certificates up to the root certificate. It also makes sure that certificate has not expired, it's not revoked etc. In addition of making sure that certificate is valid, it

checks that certificate belongs to the server you expect.

To set this up, you need to select which field of the certificate is used to store server's identify. This identity can be stored into:

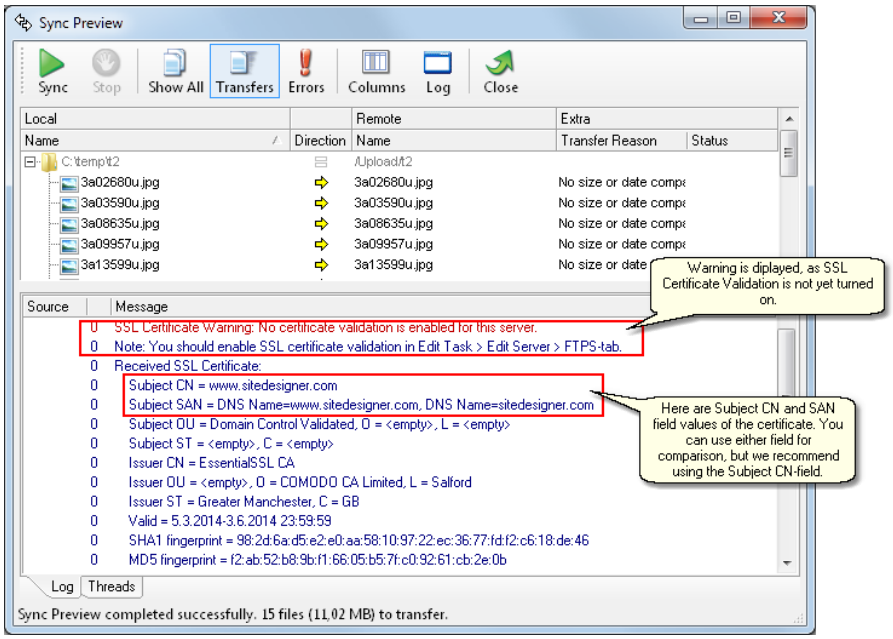
1. Subject Common Name (CN) field
2. Subject Alternate Names (SAN) field

When you generate a certificate signing request (CSR) to apply for a certificate, you decide what final certificate Subject CN- and SAN-field values are. The most common way to fill in these fields are:

1. Subject CN-field: Your server host name you want the certificate to protect, like **www.sitedesigner.com**
2. Subject SAN-field: Alternate names for the server, like **sitedesigner.com** and **www.sitedesigner.com**

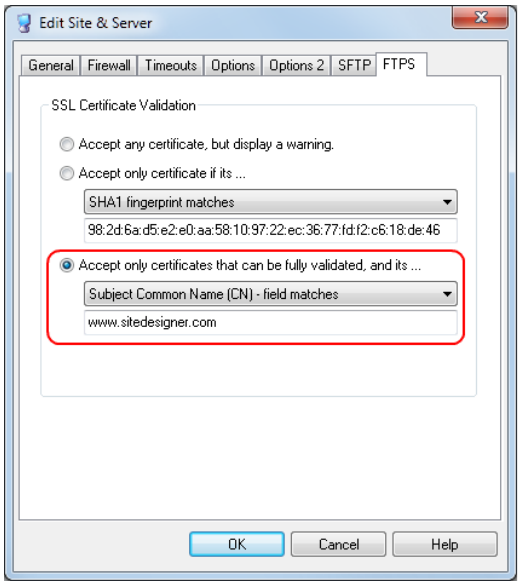
Following illustrates the connection to the FTPS server that has valid CA signed certificate installed:

1. Run Sync Preview
2. Scroll Sync Preview window log pane to the top



3. In the log pane you can see that certificate has **Subject CN = www.sitedesigner.com**, so we will use that for comparison.
4. Close Sync Preview, and select Edit Task > Edit Server > FTPS-tab

- Select **Subject Common Name (CN) - field matches** from the drop down combo list
- Enter **www.sitedesigner.com** to text field below it. The entered value must match **exactly** with certificate Subject CN-field value.



5. Save changes. Now every time BatchSync connects to the server, it validates the received server certificate and certificate path up to the root, and checks that Subject CN-field is www.sitedesigner.com. If any of these checks fail, connection is aborted and sync task is flagged with error.

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Part VI

Ordering, Support and License Agreement

6 Ordering, Support and License Agreement

6.1 Ordering Information

Order BatchSync Now

To order BatchSync online with a credit card or PayPal, and download your order immediately, please go to our web site at:

http://www.sitedesigner.com/purchase.htm

Other ordering options

The following ordering options are available:

- Credit Card - Online
- Credit Card - Phone
- Credit Card - Fax
- PayPal
- Bank/Wire Transfer
- Check/Money Order
- Invoice

Complete pricing and ordering information is available on our web site:

Order info and price list

Where do I download the purchased software?

You will receive an unlock key via email after purchase is complete. This unlock key converts the BatchSync trial version into the full version. If you have already downloaded and installed the trial version, then all you need to do is enter the unlock key at the startup screen to get the full version. So there is no separate full version to download.

The trial version download is available at: http://www.sitedesigner.com/download.htm

Where do I get the unlock key?

We will send you the unlock key via email. If you order with your credit card or PayPal account, we will process the order in real-time, so you will receive the unlock key immediately after your purchase. If you use another payment method, we will email you the unlock key immediately after your order is fully processed.

How do I enter the unlock key?

1. First download the trial version of the software here: http://www.sitedesigner.com/download.htm
2. Install it
3. Run it via the Start-menu

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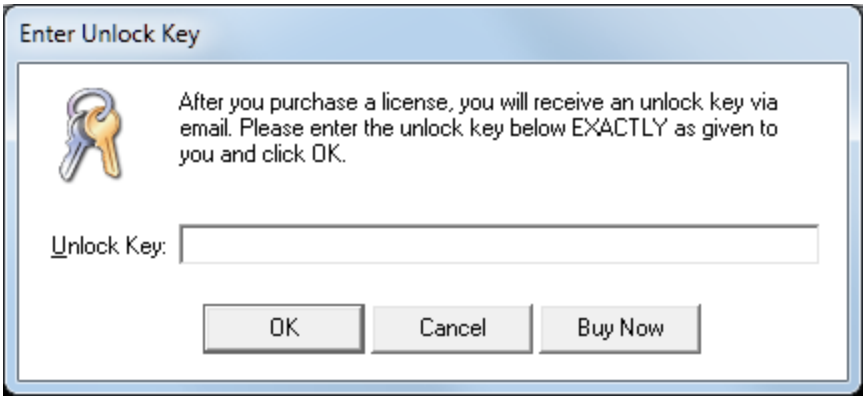
4. Click the Enter Unlock Key-button on the startup screen. The following window opens:


Enter Unlock Key
After you purchase a license, you will receive an unlock key via email. Please enter the unlock key below EXACTLY as given to you and click OK.
Unlock Key:
OK
Cancel
Buy Now

5. Enter the UNLOCK KEY in the text field
6. Click OK
7. Now the trial version is converted to the full version, with all evaluation version limitations removed

6.2 Support

Troubleshooting with Sync-Window Log-pane

When a sync task does not perform as you think it should, it's best to start troubleshooting from the Sync window Log pane. The log pane displays the communication between the client and server. It often tells the exact error message that the server is giving. So run Sync or Sync Preview, and view the log pane, looking for possible error messages from the server. This log shows the last 2000 lines of client <-> server communication.

The most common problems are in the server connection parameters, so double check the following parameters in the Edit Site window:

- **Hostaddress**. This should be in the form "ftp.myserver.com" or as an IP address such as "187.102.4.14". No http:// or ftp:// or similar prefixes.
- **Username.** You get a username from your web hosting company, or your system/network admin. Note that the username is usually case sensitive.
- **Password.** You get a password from your web hosting company, or your system/network admin. Note that the password is usually case sensitive.
- **Passive mode.** If a connection does not work with passive mode, try port mode. Some servers do not allow passive mode.
- **Server folder**. Check the folder name. The easiest way to ensure that the server folder is entered correctly is to create a new sync task using the Task Wizard. With the wizard you can select the server folder from a list.

Troubleshooting with extra log files

If Log-pane is not showing the source of the error, turn the FTP Cmd log file on in Edit Task > Log-tab > Enable FTP cmd logging. Click OK to save changes.

Now sync again to repeat the error. After the error, look at the generated FTP Cmd log for the source of the errors.

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Troubleshooting with debug logging

If the logging discussed above does not reveal the source of the problem, you can use debug logging to help solve the problem. BatchSync has a built-in debug logging feature that helps with troubleshooting and solving problems you might encounter. This logging feature is available in the menu Tools > Options > Support tab.

By default, this logging feature is turned off. You can turn it on by selecting the Debug Logging check box.

When the debug logging check box is selected, the software writes technical information to a special log file while it's running. You can see the name of the extra log file on the Support tab, so write it down. Now repeat the problem.

After you see the problem again, look at this file to see whether it shows the source of the problem. If it does not, please contact our technical support and attach this file to the email message.

Check for latest version

Please check the http://www.sitedesigner.com/download.htm page to ensure that you are running the latest version of BatchSync.

Contacting support

When contacting support and reporting problems, please include the following information:

- Can you reproduce the problem? If so, how?
- What version of Windows are you running (Windows 7, Windows Server 2008, Vista, etc.)?
- What edition and version of BatchSync are you running? (To see this, choose About... from the Help menu.)
- If a dialog box with an error message was displayed, please include the full text of the dialog box, including the text in the title bar.

Note: You can press F1 at any time while running the software for context sensitive help.

Please send the above information to support@sitedesigner.com for technical support.

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